Expert Report of Dr. Loren Collingwood

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Executive Summary

In this report, I examine past election results in North Dakota statewide, and the areas comprising the newly adopted Legislative Districts 9, 9A, 9B, and 15. I do this to determine if voting is racially polarized—i.e., if Native American voters generally prefer one candidate, and white voters vote as a bloc against that preferred candidate. In conducting this analysis, I analyzed 40 general elections from 2014 to 2022, and used the Ecological Inference (EI) statistical method to evaluate if racially polarized voting (RPV) exists. RPV is present in every election contest except for two contests.

I also conducted electoral performance analyses in the following jurisdictions: The newly adopted Legislative District 9, and Sub-Districts 9A and 9B, and Legislative District 15. An electoral performance analysis reconstructs previous election results based on new district boundaries to assess whether a Native or white preferred candidate is most likely to win in a given jurisdiction under consideration (i.e., the newly adopted legislative map). I only conduct performance analysis in contests with RPV because those elections are the ones that provide meaningful information about the effects of white bloc voting.

Finally, I conducted an electoral performance analysis and assessed map metrics on two demonstrative maps proposed by plaintiffs.

Overall, the accumulated evidence leads me to conclude the following:

- Racially polarized voting (RPV) is present in North Dakota statewide elections, and specifically in the areas comprising Legislative Districts 9 and 15. This is particularly clear in the 2016 elections featuring three Native American candidates.
- It is not necessary to rely only on exogenous (statewide) elections, because endogenous elections have now been conducted in the November 2022 election for state legislature in Districts 9, 9A, 9B, and 15. RPV is present in all these contests, and is particularly stark in contests featuring Native American candidates. This is true among both Native American voters and white voters, with both either supporting or opposing Native American candidates at even higher rates than when the groups' respective candidates of choice are both white.
- I used well-known statistical methods to assess RPV – ecological inference (EI) and Rows by Columns (RxC) – which consistently demonstrated racially polarized voting patterns between Native Americans and non-Hispanic white voters.

Exhibit 34

- In statewide elections featuring Native American candidates, racially polarized voting is present, and white voters effectively block Native American voters from being able to elect their candidates of choice in 4/4 elections analyzed.
- Native American voters cohesively prefer the same candidates for political office in the newly adopted Legislative Districts 9, Subdistricts 9A and 9B, and Legislative District 15. White voters cohesively prefer a different set of candidates for political office.
- In my reconstituted electoral performance analysis, Native American-preferred candidates tend to win in the full District 9 prior to the 2022 elections, but lose in every single 2022 contest for a block rate of 100% (8 out of 8). This includes the more probative endogenous contest featuring the Native American state senate incumbent Richard Marcellais, who was defeated for reelection by his white opponent. Of the five contests from 2014-2022 featuring Native American candidates as the preferred candidate of Native American voters, the Native American candidate loses District 9 in 60% of those contests.
- In my reconstituted electoral performance analysis, Native American-preferred candidates win handily in the newly adopted Legislative Sub-District 9A. However, Native American-preferred candidates disproportionately lose in the newly adopted Legislative Sub-District 9B because because white voters cohesively vote as a bloc against Native American voters' preferred candidates.
- In Sub-District 9B, of the 36 contests analyzed for bloc voting, white voters block the Native American-preferred candidate 29 times for a block rate of 81%. In cases involving Native American candidates, the block rate climbs even higher, to 100%.
- In Legislative District 15, the Native-American preferred candidate loses in 29 of 30 analyzed elections, for a block-rate of 96%. Just Heidi Heitkamp won in this district in an election that featured unusually intensive get-out-the-vote efforts aimed at North Dakota Native American voters as a backlash to the state's residential street address voter ID requirements in 2018.
- An analysis of plaintiff's demonstrative maps shows that Native American-preferred candidates would succeed in carrying these districts. In Demonstrative 1, of the 35 contests I analyzed, the Native American-preferred candidate won 32 of 35 (91%). In Demonstrative 2, of the 28 contests I analyzed, the Native American-preferred candidate won 26 of 28 (93%).[1]

My opinions are based on the following data sources: Statewide North Dakota general elections from 2014-2022; 2022 legislative district elections, Census Voting Age Population (VAP) block data (PL-94-171 North Dakota file), Dave's Redistricting 2020 Census VTD file

[1] I did not analyze 2014 contests in Demonstrative 2 because of complications surrounding precinct joins, as Benson County went from eight precincts to four between 2014 and 2016.

for relevant VTD/precincts in North Dakota, North Dakota Legislative Districts shape files, and plaintiff's Proposed State House Districts GIS files.

Background and Qualifications

I am an associate professor of political science at the University of New Mexico. Previously, I was an associate professor of political science and co-director of civic engagement at the Center for Social Innovation at the University of California, Riverside. I have published two books with *Oxford University Press*, 39 peer-reviewed journal articles, and nearly a dozen book chapters focusing on sanctuary cities, race/ethnic politics, election administration, and racially polarized voting. I received a Ph.D. in political science with a concentration in political methodology and applied statistics from the University of Washington in 2012 and a B.A. in psychology from the California State University, Chico, in 2002. I have attached my curriculum vitae, which includes an up-to-date list of publications.

In between my B.A. and Ph.D., I spent 3-4 years working in private consulting for the survey research firm Greenberg Quinlan Rosner Research in Washington, D.C. I also founded the research firm Collingwood Research, which focuses primarily on the statistical and demographic analysis of political data for a wide array of clients, and lead redistricting and map-drawing and demographic analysis for the Inland Empire Funding Alliance in Southern California. I am the redistricting consultant for the West Contra Costa Unified School District, CA, independent redistricting commission in which I am charged with drawing court-ordered single member districts.

I served as a testifying expert for the plaintiff in the Voting Rights Act Section 2 case *NAACP v. East Ramapo Central School District*, No. 17 Civ. 8943 (S.D.N.Y.), on which I worked from 2018 to 2020. In that case, I used the statistical software eiCompare and WRU to implement Bayesian Improved Surname Geocoding (BISG) to identify the racial/ethnic demographics of voters and estimate candidate preference by race using ecological data. I am the quantitative expert in *LULAC vs. Pate (Iowa)*, 2021, and have filed an expert report in that case. I am the BISG expert in *LULAC Texas et al. v. John Scott et al. (1:21-cv-0786-XR)*, 2022. I filed two reports and have been deposed in that case. I am the RPV expert for Fair Maps plaintiff in *LULAC v. Abbott*. I have filed three reports and have been deposed in that case. I was the RPV expert for the plaintiff in *East St. Louis Branch NAACP, et al. vs. Illinois State Board of Elections, et al.*, having filed two reports in that case. I am the Senate Factors expert for plaintiff in *Pendergrass v. Raffensperger (N.D. Ga. 2021)*, having filed a report in that case. I was the RPV expert for intervenors in *Johnson, et al., v. WEC, et al., No. 2021AP1450-OA*, having filed three reports in that case. I was the RPV expert for plaintiff in *Faith Rivera, et al. v. Scott Schwab and Michael Abbott*. I filed a report, was deposed, and testified at trial in that case. I served as the RPV expert for the intervenor in *Walen and Henderson v. Burgum and Jaeger No 1:22-cv-00031-PDW-CRH*, where I filed a report and testified at a preliminary injunction hearing. I am the RPV expert in *Lower Brule Sioux Tribe v. Lyman County* where I filed a report and testified at trial. I am the RPV expert for plaintiff in *Soto Palmer et al. vs. Hobbs et al.* and have filed a report.

Racially Polarized Voting

Racially polarized voting (RPV) occurs when one racial group (i.e., Native American voters) consistently votes for one candidate or set of candidates, and another racial group (i.e., non-Hispanic white voters) regularly votes for another candidate or set of candidates. I analyze multiple elections across five election years to determine whether a pattern of RPV is present in a given geography and/or political jurisdiction (i.e., statewide, Legislative District 9, etc.). In an election contest between two candidates, RPV is present when voters belonging to one racial/ethnic group vote for one candidate and voters who belong to another racial/ethnic group prefer the other candidate. The favored candidate of a given racial group is called a ``candidate of choice.'' However, if a majority of voters of both racial groups back the same candidate in a contest, then RPV is not present in that contest.

Racially polarized voting does not mean voters are racist or intend to discriminate. In situations where RPV is clearly present, majority voters may often be able to block minority voters from electing candidates of choice by voting as a broadly unified bloc against minority voters' preferred candidate. At issue in this report, however, is whether the recently passed Legislative Districts 9 (including subdistricts 9A and 9B) and 15 of North Dakota's state legislative plan potentially dilutes Native American voters' ability to elect candidates of choice.

I examine RPV in the context of North Dakota of both exogenous statewide general elections reconstituted within Districts 9, 9A, 9B, and 15, as well as the most recent endogenous 2022 state legislative contests for those seats.

Ecological Inference

To determine if RPV exists, experts must generally infer individual level voting behavior from aggregate data – a problem called ecological inference. We turn to aggregate data because most of the time we do not have publicly available survey data on all election contests and in particular geographic areas where we want to see if RPV is present. In general, we want to know how groups of voters (i.e., Native Americans or non-Hispanic whites) voted in a particular election when all we have to analyze are precinct vote returns and the demographic composition of the people who live in those precincts.

Experts have at their disposal several methods to analyze RPV: homogeneous precinct analysis (i.e., taking the vote average across high density white precincts vs. high density Black precincts), ecological regression (ER), ecological inference (EI), and ecological inference Rows by Columns, which is designed specifically for the multi-candidate, multi-racial group environment. However, all methods can be used to assess whether RPV is present in diverse election environments involving multiple candidates and multiple groups. In this report I rely on the ecological inference (EI) method and the Rows by Columns (RxC) method to assess whether voting is racially polarized. I also focus my attention on the two top of the ticket candidates in each contest.

The R software package, eiCompare (Collingwood et al. 2020), builds upon packages eiPack (Lau, Moore, and Kellermann 2020) and ei (King and Roberts 2016) to streamline RPV

analysis, and includes all of these aforementioned statistical methods. In this report I include ecological inference estimates accounting for variation in turnout by race. That is, I divide candidate vote by voting age population (rather than out of total voted in that contest) and include an estimate for no vote. I then calculate vote choice estimates by race for only people who voted. In this way, the method prevents non-voters from skewing the analysis and accounts for variation in turnout by race.

The rest of the report presents my results: 1) A list of the elections analyzed; 2) Results and analysis; 3) District 9, 9a, and 9b results and analysis; 4) District 15 results and analysis; 5) Plaintiff map results and analysis.

List of Elections Analyzed

Table 1 and 2 present the elections I analyzed. Native American candidates have an asterisk after their name. Overall, there are 40 elections. To establish statewide RPV, I only analyze the contests featuring Native American candidates: the 2016 U.S. Congress, the 2016 Insurance Commissioner, the 2016 Public Services Commissioner, and the 2022 Public Services Commissioner. I do this to establish RPV and blocking occur against Native American candidates in North Dakota in general.

In District 9, I analyze 38 elections across four election cycles finding RPV in each contest. However, in District 15, I analyzed 32 contests because I could not adequately convert the new District 15 to the 2014 precincts to join previous results with the new district boundaries. This is due to collapsed precincts falling within the district occurring between 2014 and 2016 that did not affect the merge in District 9 but did do so in District 15. Nonetheless, I find RPV in every single contest I analyzed in District 15.

Table 1. List of contests analyzed, between 2014-2022. Native American candidates have an asterisk after their name.

Year	Contest	Dem Candidate	GOP Candidate	Statewide Winner	D9 RPV	D15 RPV	Statewide RPV
2022	Agriculture Commissioner	Dooley	Goehring	Goehring	Yes	Yes	
2022	Attorney General	Lamb	Wrigley	Wrigley	Yes	Yes	
2022	Public Service Commissioner 4 yr	Hammer	Hoffart	Hoffart	Yes	Yes	
2022	Public Service Commissioner	Moniz*	Fedorchak	Fedorchak	Yes	Yes	Yes
2022	Secretary of State	Powell	Howe	Howe	Yes	Yes	
2022	U.S. House	Mund	Armstrong	Armstrong	Yes	Yes	
2022	U.S. Senate	Christiansen	Hoeven	Hoeven	Yes	Yes	
2022	State Senate D9	Marcellais*	Weston	Weston	Yes		
2022	State Senate D15	Brown*	Estenson			Yes	
2022	State House D15	Lawrence*	Johnson/Frelich	Johnson/Frelich		Yes	
2020	President	Biden	Trump	Trump	Yes	Yes	
2020	U.S. House	Raknerud	Armstrong	Armstrong	Yes	Yes	
2020	Governor	Lenz	Burgum	Burgum	Yes	Yes	
2020	Auditor	Hart	Gallion	Gallion	Yes	Yes	
2020	Treasurer	Haugen	Beadle	Beadle	Yes	Yes	
2020	Public Services Commissioner	Buchmann	Kroshus	Kroshus	Yes	Yes	
2018	U.S. Senate	Heitkamp	Cramer	Cramer	Yes	Yes	
2018	U.S. House	Schneider	Armstrong	Armstrong	Yes	Yes	
2018	Secretary of State	Boschee	Jaeger (I)	Jaeger	Yes	Yes	
2018	Attorney General	Thompson	Stenhjem	Stenehjem	Yes	Yes	
2018	Agriculture Commissioner	Dotzenrod	Goehring	Goehring	Yes	Yes	
2018	Public Services Commissioner	Brandt	Christmann	Christmann	Yes	Yes	
2018	Public Services Commissioner 2yr	Buchmann	Kroshus	Kroshus	Yes	Yes	
2018	Tax Commmissioner	Oversen	Rauschenberger	Raushenberger	Yes	Yes	
2016	President	Clinton	Trump	Trump	Yes	Yes	
2016	U.S. Senate	Glassheim	Hoeven	Hoeven	Yes	Yes	
2016	U.S. House	Iron Eyes*	Cramer	Cramer	Yes	Yes	Yes
2016	Governor	Nelson	Burgum	Burgum	Yes	Yes	
2016	Insurance	Buffalo*	Godfread	Godfread	Yes	Yes	Yes
2016	Public Services Commissioner	Hunte Beaubrun*	Fedorchak	Fedorchak	Yes	Yes	Yes
2016	Treasurer	Mathern	Schmidt	Schmidt	Yes	Yes	
2014	Attorney General	Kraus	Stenehjem	Stenehjem	Yes		
2014	Agriculture Commissioner	Taylor	Goehring	Goehring	Yes		
2014	Public Service Commissioner 2yr	Axness	Fedorchak	Fedorchak	Yes		
2014	Public Service Commissioner	Reisenauer	Kalk	Kalk	Yes		
2014	Secretary of State	Fairfield	Jaeger	Jaeger	Yes		
2014	Tax Commmissioner	Astrup	Rauschenberger	Rauschenberger	Yes		
2014	U.S. House	Sinner	Cramer	Cramer	Yes		

Table 2. List of non-partisan contests analyzed, 2016.

Year	Contest	Candidate 1	Candidate 2	Statewide Winner	D9 RPV	D15 RPV	Statewide RPV
2016	Justice of Supreme Court	Bolinske	Tufte	Tufte	No	No	
2016	Supervisor of Public Inst.	Chiang	Baesler	Baesler	No	No	

Racially Polarized Voting Statewide

I analyzed three statewide contests including Native American candidates in 2016 and one in 2022:

- 2016 Insurance Commissioner featuring Ruth Buffalo (Native American) and Jon Godfread
- 2016 U.S. House of Representatives featuring Chase Iron Eyes (Native American) and Kevin Cramer (as well as Libertarian Jack Seaman)
- 2016 Public Service Commissioner featuring Marlo Hunte-Beaubrun (Native American), Julie Fedorchak, and Thomas Skadeland (Libertarian)
- 2022 Public Service Commissioner featuring Melanie Moniz (Native American) and Julie Fedorchak.

To conduct the analysis and all analyses, I gathered precinct election returns for candidates running in each contest either from the redistricting data hub[2] or the North Dakota Secretary of State, which provides precinct vote returns[3] While the redistricting data hub data come formatted in VTDs and in shape files, not all contests are always available. In the case where I downloaded data from the Secretary of State website I joined the data with VTD shape files based on VTD to precinct crosswalk column.

Next, I downloaded the 2020 VTD Census file from Dave's Redistricting – publicly available software. This file aggregates Census block demographic data to the VTD level. I join this file with the voting data based on the GEOID20 column – which is a unique ID for each VTD/precinct.

The last step is to develop the inputs to the ecological inference model. I convert the now precinct racial estimates to a percent, generating a percent Native American by dividing the

[2] https://redistrictingdatahub.org/state/north-dakota/

[3] See https://results.sos.nd.gov/ResultsSW.aspx?text=All&type=SW&map=CTY&eid=292 for 2016 example.

estimated number of VAP Native American individuals by the total number of VAP individuals in a precinct. I do the same for non-Hispanic white, then generate a race:other category. I convert candidate choice to a percent by dividing candidate vote by VAP (rather than out of total voted in that contest) and include an estimate for no vote. I then calculate vote choice estimates by race for only people who voted. In this way, the method accounts for non-voters and accounts for variation in turnout by race.

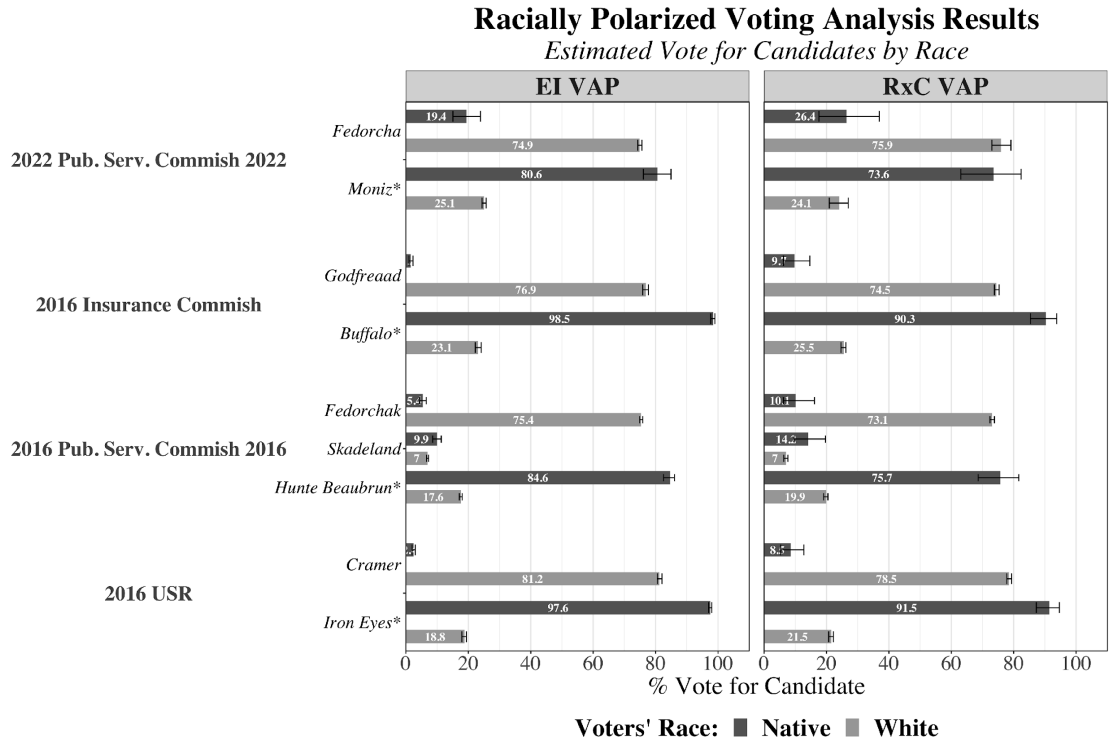
Figure 1 presents the racially polarized voting results. For every analysis, I include both iterative Ecological Inference results, and Rows by Columns (RxC) results – the most commonly accepted EI methods. The two methods consistently produce substantively similar findings. Beginning with the 2016 U.S. House of Representatives contest, in the EI analysis, Native Americans backed Chase Iron Eyes with 98%. White voters, however, supported Cramer with 81%. In the RxC analysis, results are complementary: Native Americans backed Chase Iron Eyes with 92%. White voters, however, supported Cramer with 79%.

In the 2016 Public Service Commissioner race, the Native American vote backed Hunte Beaubrun at 85% (76% with RxC model). However, white voters backed preferred Fedorchak with 75% (73% in the RxC model).

On the Insurance Commissioner contest, the Native American vote supported Ruth Buffalo with 99% of the vote (90% in the RxC model). Meanwhile, white vote backed Godfread with 77% (75% in the RxC model).

Finally, in 2022, the patterns are consistent: Native American voters supported Moniz for Public Service Commissioner (81% EI, 74% RxC), whereas white voters supported Fedorchak (75% EI, 76% RxC).

Figure 1. Racially Polarized Voting assessment statewide involving native American candidates, 2016 general election, and 2022 general election.



The above section reveals stark racially polarized voting between Native American voters and white voters in North Dakota. Moreover, the findings show that whites are blocking Native Americans from electing candidates of choice. Based on official statewide results,[4] of the three Native American candidates that ran statewide all lost:

- In the 2016 U.S. House race, Cramer (white) won 69% to Iron Eyes' 24%.
- In the 2016 Insurance Commissioner race, Godfread (white) defeated Buffalo (Native American) 64% to 27%.
- In the 2016 Public Service Commissioner contest, Fedorchak bested Hunte-Beaubrun by a margin of 69% to 23%.
- In the 2022 Public Service Commissioner contest, Fedorchak beat Moniz 71% to 29%.[5]

Thus, all four Native American candidates lose handily; as whites bloc-vote against the Native American candidates.

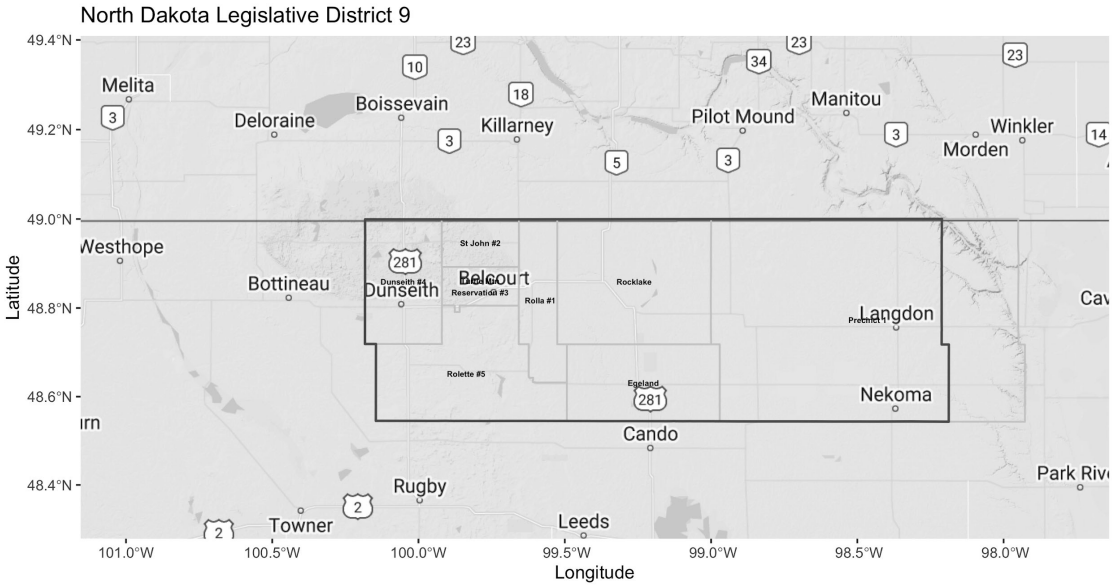
[4] https://results.sos.nd.gov/ResultsSW.aspx?text=All&type=SW&map=CTY&eid=292

[5] https://results.sos.nd.gov/ResultsSW.aspx?text=All&type=SW&map=CTY&mode=0

Racially Polarized Voting in District 9

I analyzed 30 previous contests between 2014-2020 in the new Legislative District 9, and eight contests in 2022 for a total of 38 contests. To do so, first, I took the legislative shape file boundary from the state of North Dakota and subset it to just District 9. I then overlaid these boundaries against the voting district (VTD) boundaries for the state of North Dakota. Figure 2 presents the map with precinct boundaries in turquoise, precinct name written as text, and black boundary. Just one precinct is split between being in the district and outside of the district – Precinct 1 from Cavalier County. However, most of Cavalier's population and geography is kept within the district.

Figure 2. District 9 under new North Dakota map.



Figures 3 - 7 present the results of the RPV analysis across 38 election contests spanning five election years from 2014 - 2022. For each election cycle I present two columns: The EI estimates (Column 1) and RxC estimates (Column 2). On the y-axis I list each contest, and the candidate surnames. Surnames labeled with an asterisk feature Native American candidates. Vote choice estimates for both whites and Native Americans are displayed visually with the blue bar representing the Native American vote share for a given candidate, and the green bar representing the white vote for a candidate. Each model's 95% confidence intervals present the underlying statistical uncertainty (the likely range the true estimate would fall into given the statistical model).

There are so many contests that I will not list every single result here because the pattern is exceptionally clear: Native American voters tend to prefer one set of candidates, white voters prefer another set of candidates. In only two contests in 2016 (Justice of the Supreme Court and Supervisor of Public Instruction) are elections not racially polarized. For example, in the 2014 Agriculture Commissioner contest, the EI model estimates that 58% of white voters backed Goehring, whereas 94% of Native Americans backed Taylor. The RxC shows similar patterns: 54% of whites backing Goehring and 87% of Native Americans backings Taylor. The Attorney General contest shows a similar result: 88% (74% in RxC) of Native American voters supported Kraus Parr whereas 80% (75% in RxC) of white voters backed Stenehjem. A similar pattern is repeated in all the other 2014 contests for an RPV rate of 100%.

Figure 3. Racially Polarized Voting assessment in statewide contests subset to the new District 9 boundaries, 2014 contests.

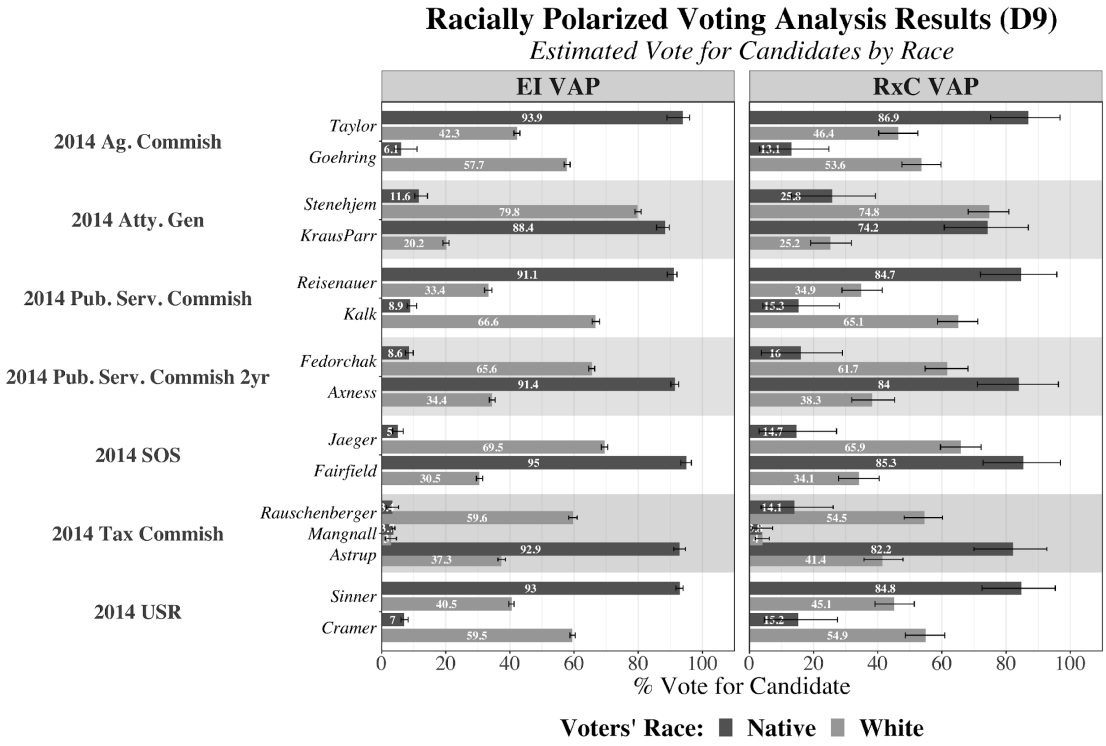
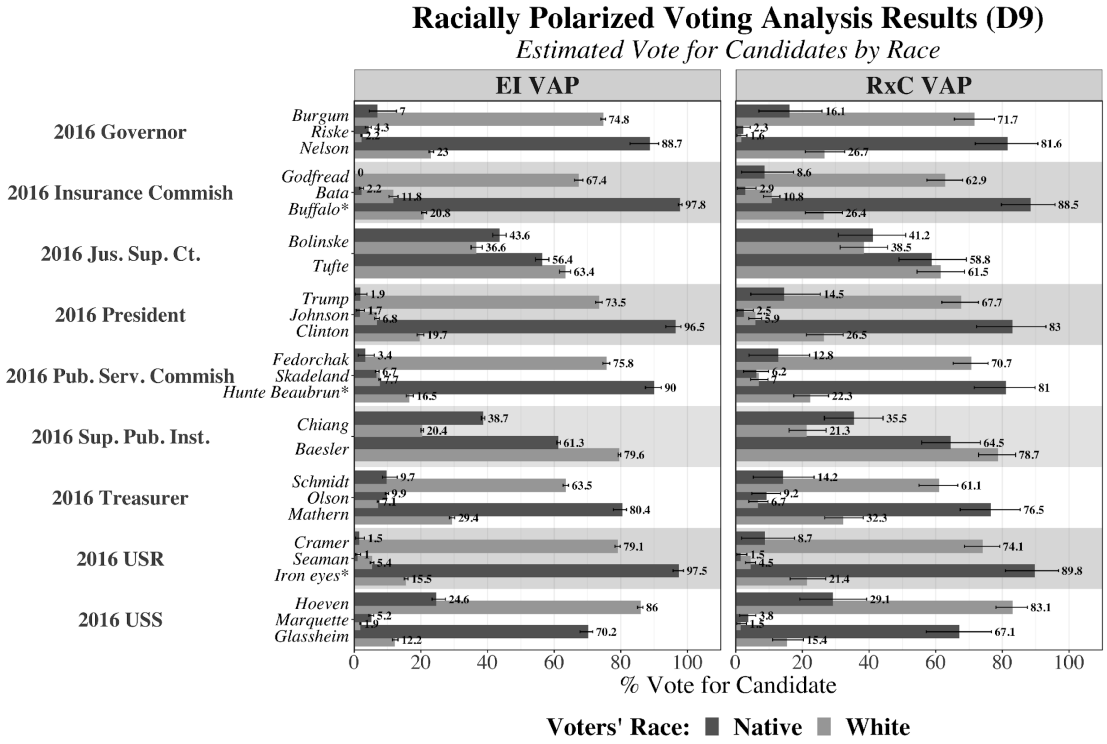


Figure 4 presents results from the 2016 RPV analysis, displayed in the exact same format as 2014. The findings are exceedingly consistent with the 2014 analysis. RPV is present in seven of nine contests (78%). For example, the EI analysis shows 89% (82% in RxC model) of Native American voters backing Nelson, whereas 74% (72% in RxC model) of white voters supporting Burgum. Moreover, of particular note, the results show a tendency for Native American candidates to receive greater support among Native American voters than do white candidates. For example, 98% (89% in RxC model) of Native American voters supported Ruth Buffalo for Insurance Commissioner; and 98% (90% in RxC model) supported Chase Iron Eyes for U.S. Congress.

The only exceptions to the patterns of RPV are the Justice of the Supreme Court and Supervisor of Public Instruction contests. There, a majority of both white and Native American voters support the same candidates: Tufte for Supreme Court and Baesler for Public Instruction, respectively.

Figure 4. Racially Polarized Voting assessment in statewide contests subset to the new District 9 boundaries, 2016 contests.



I examined eight 2018 contests subset to Legislative District 9. Each contest shows very clear patterns of racially polarized voting. For example, in the U.S. House of Representatives election, the EI model shows Native Americans backing Schneider with 86% and the RxC model puts the number at 81%. Meanwhile, white voters instead back Armstrong at 69% (EI model) to 62% (RxC model). Every contest here shows consistent patterns.

Figure 5. Racially Polarized Voting assessment in statewide contests subset to the new District 9 boundaries, 2018 contests.

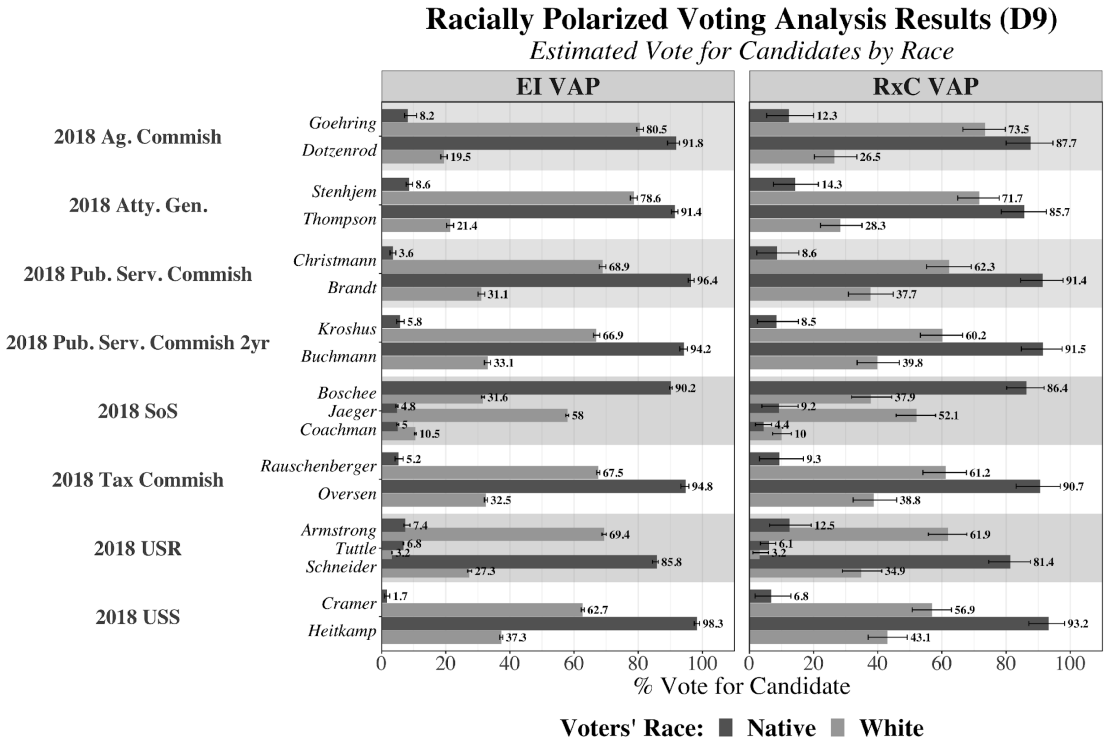
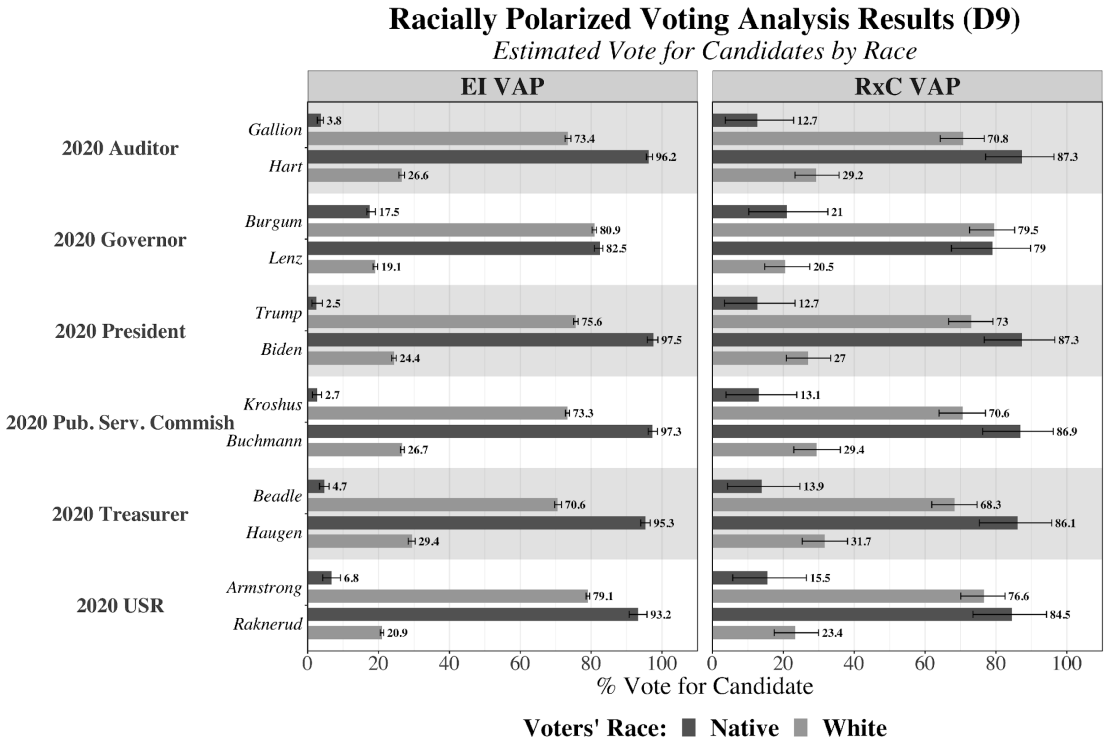


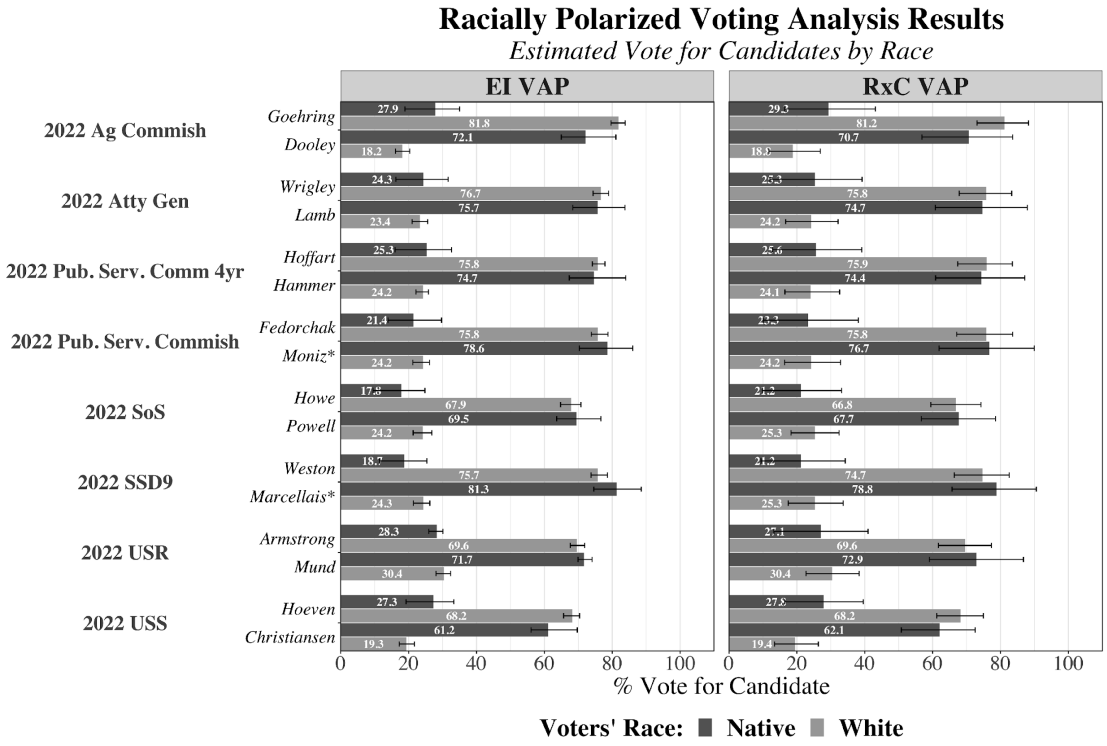
Figure 6 presents the 2020 RPV results. All six contests once again show very clear and consistent patterns of racially polarized voting. For example, 98% (87% in the RxC model) of Native American voters backed Joe Biden for president; whereas 76% (73% in RxC model) of whites instead backed Donald Trump. Every other contest reflects these patterns bar none.

Figure 6. Racially Polarized Voting assessment in statewide contests subset to the new District 9 boundaries, 2020 contests.



Finally, I analyzed the recent round of general election contests subset to District 9. I include here the analysis of the actual results in the new Legislative District 9 – an endogenous contest. The patterns are again consistent with earlier years: Native American voters back one set of candidates and white voters back a different set of candidates. This is true in all eight contests, but especially in the endogenous contest (LD 9) between the Native American candidate (Marcellais) and Weston. In that contest, Native American voters backed Marcellais (81% in EI model, 79% in RxC model), whereas white voters preferred Weston between 75% (RxC model) to 76% (EI model). Taken in total then, RPV is present in 36 of 38 (95%) contests analyzed in D9 over a five-cycle period.

Figure 7. Racially Polarized Voting assessment in statewide contests subset to the new District 9 boundaries, 2020 contests.



I do not conduct an EI or RxC RPV analysis in subdistricts 9A and 9B because 1) there are so few precincts in each subdistrict, and 2) subdistrict 9A has a large share of Native Americans, whereas 9B does not, so there are no truly homogeneous precincts of both racial groups in both subdistricts.

But because it is clear that RPV exists within District 9 as a whole, and because subdistrict 9A contains 68.5% of the total Native VAP within District 9 and subdistrict 9B contains 79.7% of the total white VAP within District 9, it necessarily follows that voting within the two subdistricts is likewise racially polarized.

This pattern can be confirmed by a review of the demographic makeup of the precincts within each subdistrict and their election results. For example, the charts below present the Native American and white VAPs within the precincts in both subdistricts as well as the 2022 election results for state house and state senate within those precincts. As is clear from the chart below, the election results within the precincts change in relation to the increase or decrease in the Native American or white VAPs. In subdistrict 9A, it is clear from the homogeneous Native American Rolette Precinct 3 that the two Native American state legislative candidates – Davis and Marcellais – were Native American voters' candidates of choice. Their vote share decreases in the remaining two precincts in correlation to their corresponding decrease in VAP share.

Table 3. Subdistrict 9A – Demographics and 2022 Legislative Results.

Precinct	Native VAP	White VAP	2022 State House Native Cand.	2022 State House White Cand.	2022 State Senate Native Cand.	2022 State Senate White Cand.
Rolette 3	0.936	0.055	Davis: 90.3%	Malo: 9.6%	Marcellais: 87.3%	Weston: 12.6%
Rolette 4	0.783	0.205	Davis: 70.9%	Malo: 29.2%	Marcellais: 74.9%	Weston: 25.1%
Rolette 5	0.373	0.609	Davis: 26.9%	Malo: 72.5%	Marcellais: 30.0%	Weston: 69.8%

In subdistrict 9B, it is clear from the homogeneous white precincts in Towner and Cavalier Counties that Weston and Henderson are the candidates of choice of white voters in subdistrict 9B. But Marcellais and Nelson prevail in the majority Native American Rolette Precinct 2. Notably, Nelson – who is white and was the incumbent state house representative before District 9 was split into subdistricts – receives over 12 percentage points higher among the white voters in Towner County than the Native American incumbent senator Marcellais. This illustrates the trend noted above that white bloc voting increases when the candidates preferred by Native American voters are themselves Native Americans.

Table 4. Subdistrict 9B – Demographics and 2022 Legislative Results.

Precinct	Native VAP	White VAP	2022 State House Native Cand.	2022 State House White Cand.	2022 State Senate Native Cand.	2022 State Senate White Cand.
Rolette 1	0.398	0.562	Nelson: 49.3%	Henderson: 49.3%	Marcellais: 39.2%	Weston: 60.4%
Rolette 2	0.774	0.219	Nelson: 58.2%	Henderson: 40.8%	Marcellais: 56.0%	Weston: 44.0%
Towner County	0.027	0.96	Nelson: 46.1%	Henderson: 51.6%	Marcellais: 34.7%	Weston: 64.9%
Cavalier County	0.018	0.956	Nelson: 20.4%	Henderson: 68.8%	Marcellais: 19.8%	Weston: 79.9%

Given the clear RPV from the EI and RxC analysis in District 9 as a whole, the high concentration of District 9's Native American voters within subdistrict 9A and its white voters within subdistrict 9B, and the correlation observable between the subdistricts' precincts' demographics and election results, it is clear that the subdistricts both feature RPV.

Performance Analysis District 9

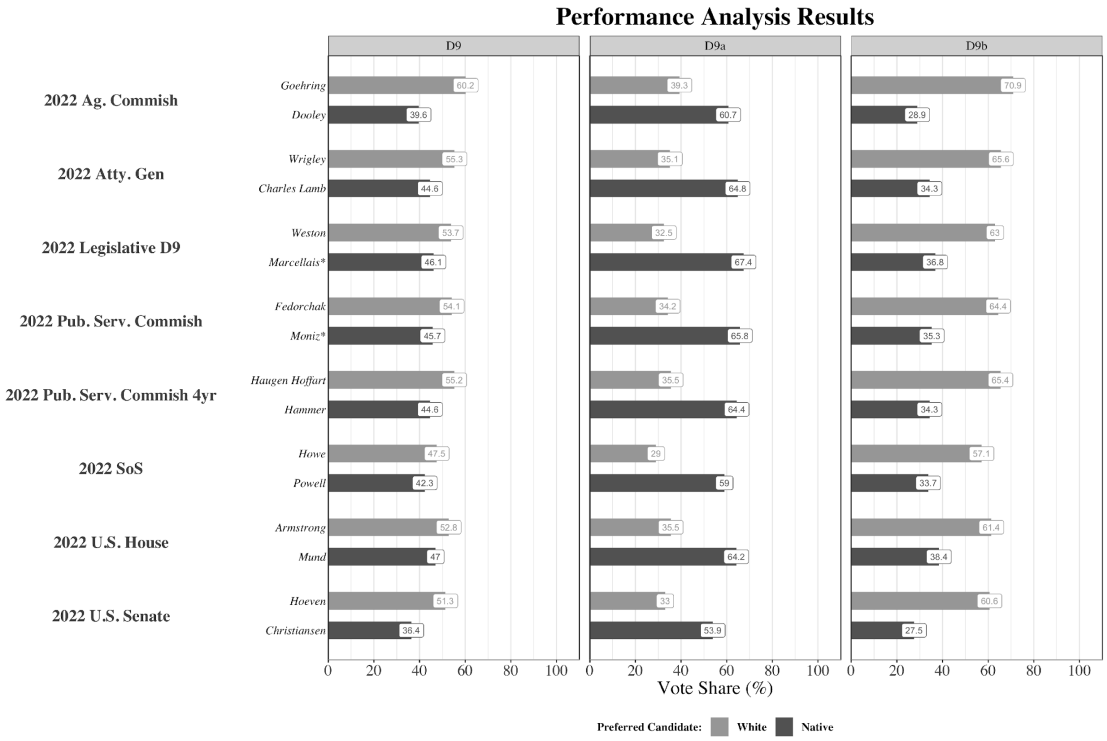
To conduct the performance analysis, I subset the precinct vote returns to the appropriate precincts then sum votes for candidate 1 and candidate 2, respectively, dividing by total votes. I also take care to weight split precincts by underlying population voting age

population. For instance, if a precinct's population is half inside subdistrict 9A and half in 9B, I weight all precinct votes according to this share.

Figure 8 presents the 2022 election results of the full District 9 then also subdistricts 9A, and 9B. The full district results are presented in the left-most panel, 9A the middle panel, and 9B the rightmost panel. The main finding is very straightforward: White-preferred candidates (as adjudged by the RPV analysis above) won every single 2022 election in the full District 9, including the legislative district itself (Weston 53.7% to 46.1% for Marcellais). In general the victories tend to range from 5% to 10%, but Goehring beats Dooley by more than 20 points in the Agriculture Commission contest.

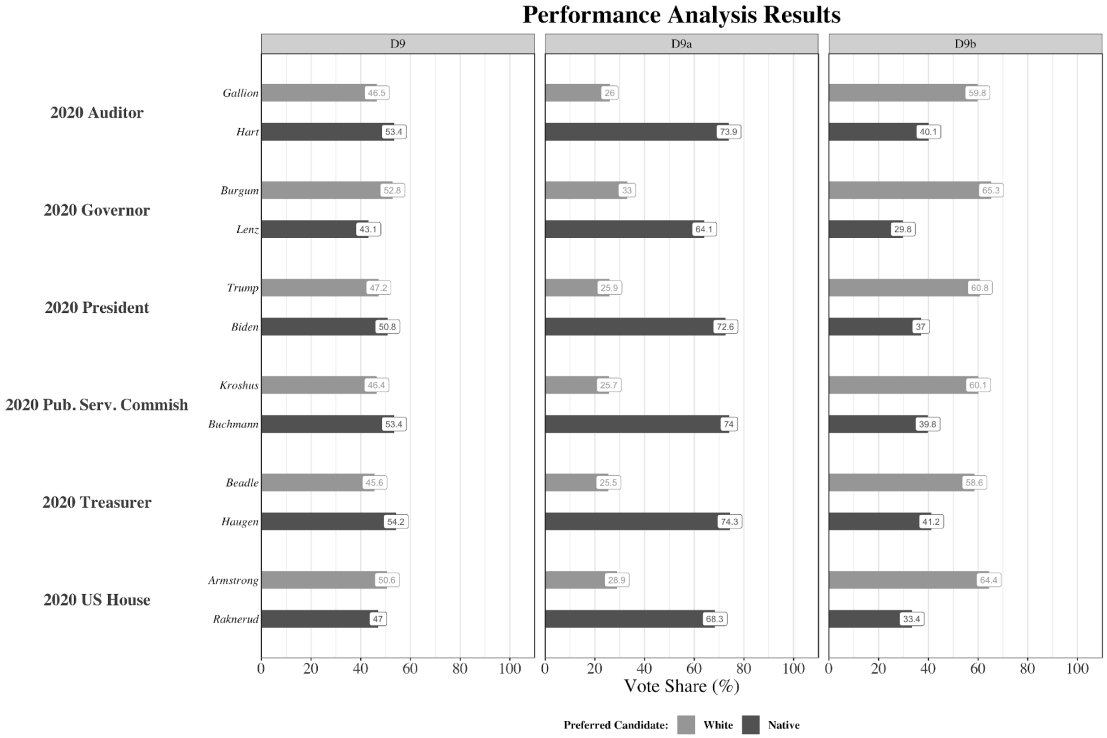
However, Districts 9A and 9B show diverging results: Native-preferred candidates prevailed in all eight contests within the 9A boundaries, but white-preferred candidates prevailed in all eight contests within the 9B boundaries.

Figure 8. Performance analysis assessment in statewide contests subset to the new District 9 boundaries, as well as endogenous LD-9 2022 elections.



I also conducted a performance analysis in the 2020 contests, displayed in Figure 9. These contests show a mixed result at the full district level: Native-preferred candidates prevail in four of six contests; however the contests are generally very competitive. At the subdistrict level, once again Native-preferred candidates convincingly win in Subdistrict 9A (6/6, 100% success) and convincingly lose in Subdistrict 9B (0/6, 0% success).

Figure 9. Performance analysis assessment in statewide contests subset to the new District 9 boundaries, 2020 elections.



I conducted a similar performance analysis in the 2018 statewide contests (see Figure 10). The 2018 election presents special circumstances that warrant caution and counsel against mechanically interpreting that year's election results. First, nationwide this was a Democratic wave election. Second, there was a unique and unprecedented voter turnout effort targeted to Native American voters in North Dakota that year as a backlash to the residential street address voter ID law that came back into effect following the U.S. Supreme Court's decision lifting the injunction against that law in the weeks prior to the November 2018 election. That election featured an intense voter turnout effort from state, regional, and national Native American rights groups as well as celebrity appearances and concerts at Turtle Mountain and other reservations seeking to boost turnout and overcome the effects of the challenged law. Third, the top of the ticket was a nationwide marquee U.S. Senate race between then-Sen. Heitkamp and now-Sen. Cramer. In these exceptional circumstances, the Native-preferred candidates were able to win the full District 9 (8/8, 100% success rate). At the subdistrict level, once again Native-preferred candidates convincingly win in Subdistrict 9A (8/8, 100% success) and win more often than not in Subdistrict 9B (5/8, 63% success).

Figure 10. Performance analysis assessment in statewide contests subset to the new District 9 boundaries, 2018 elections.

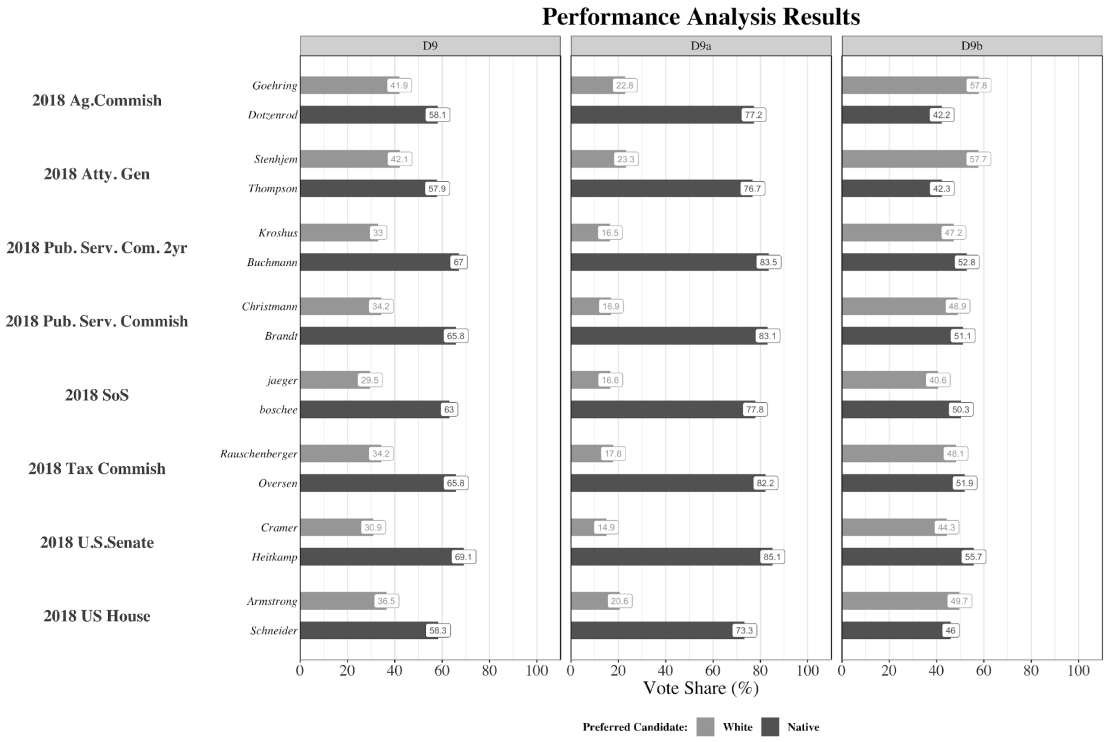
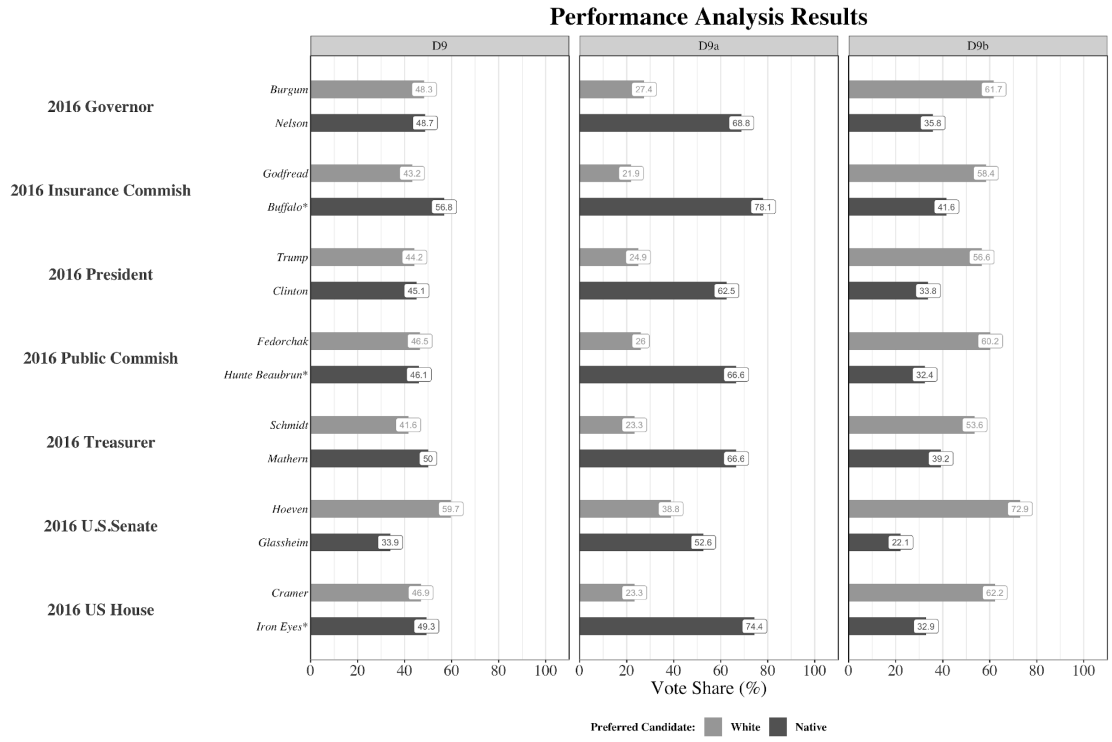


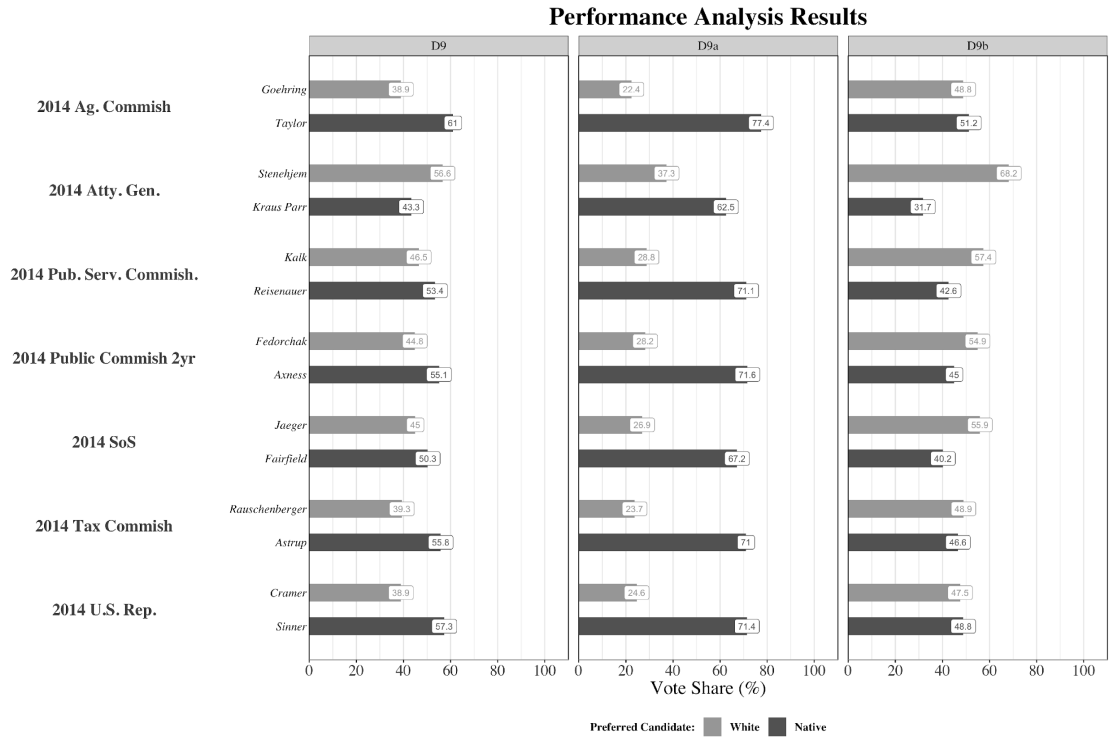
Figure 11 shows my performance analysis results of 2016 contests subset to Districts 9, 9A, and 9B. Note this analysis excludes the two contests in which RPV is not present. The full District 9 results show Native-preferred candidates winning in 5 of 7 contests, but the margins are extremely close. For example, in the Gubernatorial contest Nelson (Native-preferred) bests Burgum 48.7% to 48.3%. The subdistrict results, however, once again show clear Native-preferred candidate victories in 9A (7 of 7, 100% success) and white-preferred candidate victories in 9B (0 of 7 Native-preferred victories, 0% success).

Figure 11. Performance analysis assessment in statewide contests subset to the new District 9 boundaries, 2016 elections.



Finally, Figure 12 shows the 2014 contests results. The results show Native-preferred candidates tending to prevail in the full District 9, always prevailing in subdistrict 9A and prevailing two of seven times in 9B.

Figure 12. Performance analysis assessment in statewide contests subset to the new District 9 boundaries, 2014 elections.



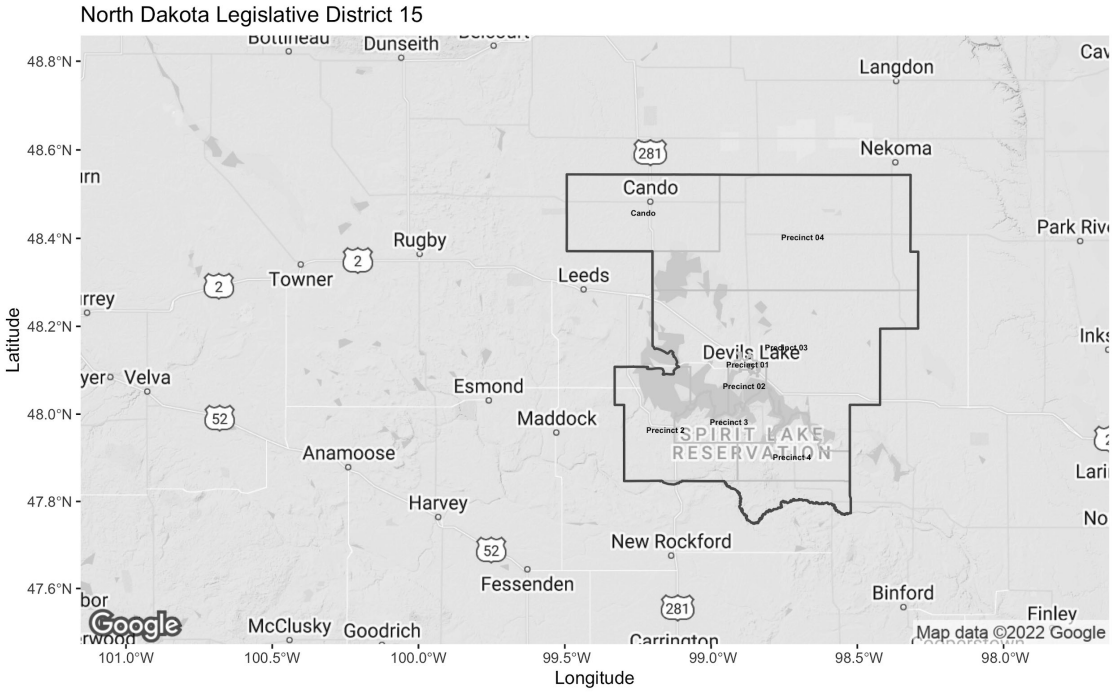
Taken in total, in the newly passed Legislative District 9, earlier elections show that the Native-preferred candidate tended to win the full District 9 (although with the 2018 election presenting special circumstances that counsel against providing them undue weight), always win subdistrict 9A, and almost always lose subdistrict 9B. However, when we examine the most recent round of elections (2022) we observe that the Native-preferred candidate lost every single contest, including the defeat of the Native American candidate (Marcellais) in the actual District 9 contest for state senate, and the defeat of Native American-preferred incumbent state representative Nelson in subdistrict 9B. The result is that following the 2022 elections, Native American voters in District 9 went from being able to elect 3 of 3 state legislators to instead just 1 of 3 state legislators within District 9.

Overall, the results point to three conclusions with respect to white bloc voting in District 9. First, the more recent election data–which is generally accepted as the most probative of current local conditions and voting patterns–reveals a stark pattern of white bloc voting preventing Native American voters from being able to elect their preferred candidates in District 9. Second, in the endogenous contests – which are generally accepted as having greater probative value than exogenous contests – there is a clear pattern of white bloc voting preventing Native American voters from being able to elect their preferred candidates in District 9. Third, across all analyzed years when the candidate of choice of Native American voters in District 9 is a Native American (as opposed to a white candidate), then white bloc voting results in the Native American candidate losing 60% of the contests in District 9.

Racially Polarized Voting in District 15

I analyzed 32 contests in the new legislative District 15. Figure 13 presents the district boundaries with precincts lined in turquoise and labeled at each respective precinct's geospatial centroid.

Figure 13. District 15 under new North Dakota map.



Figures 14 - 17 present the results of the RPV analysis across 32 election contests spanning five election years from 2016 - 2022. The results are consistent with the District 9 analysis: RPV is present in 30 of 32 contests for a rate of 94% RPV. This is likewise true in the 2022 endogenous contests for District 15 state senate and state house – both of which featured Native American candidates who were the candidates of choice of Native American voters.

Figure 14. Racially Polarized Voting assessment in statewide contests subset to the new District 15 boundaries, 2016.

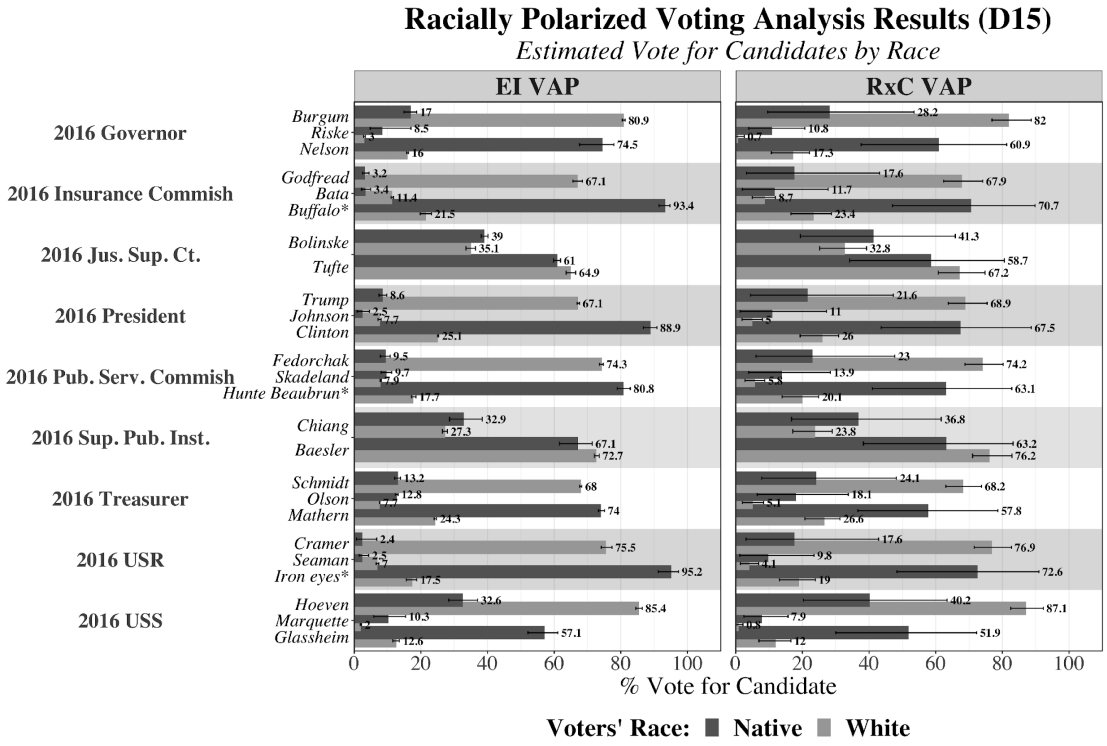


Figure 15. Racially Polarized Voting assessment in statewide contests subset to the new District 15 boundaries, 2018.

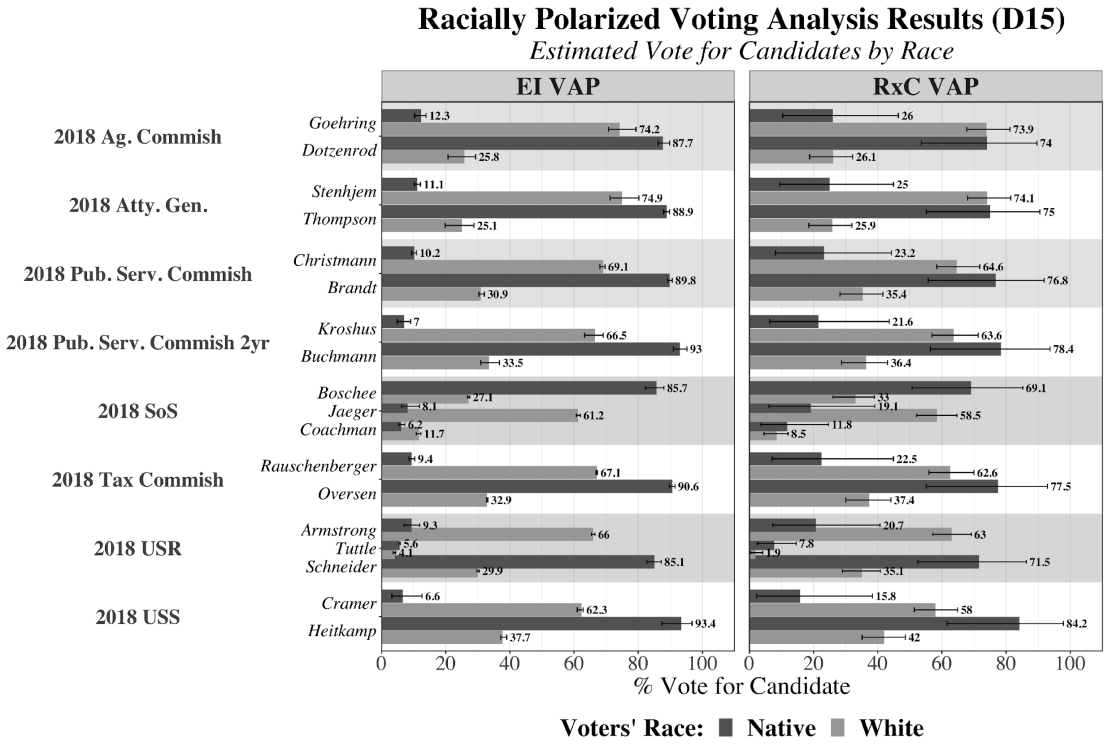


Figure 16. Racially Polarized Voting assessment in statewide contests subset to the new District 15 boundaries, 2020.

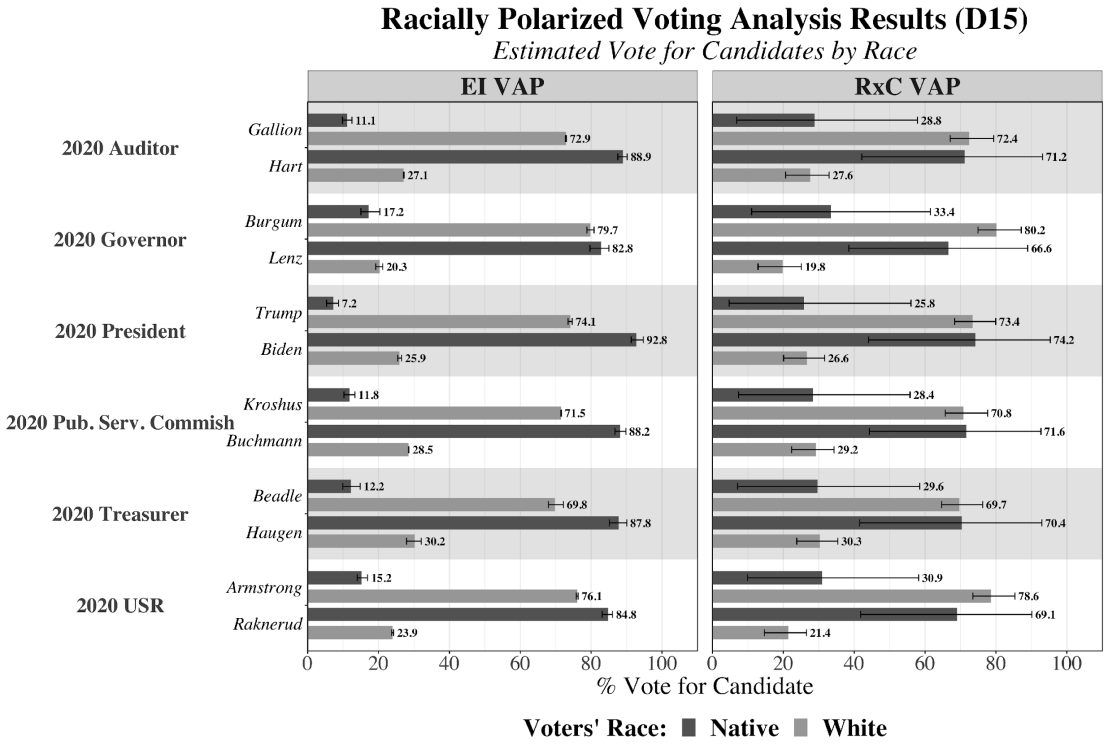
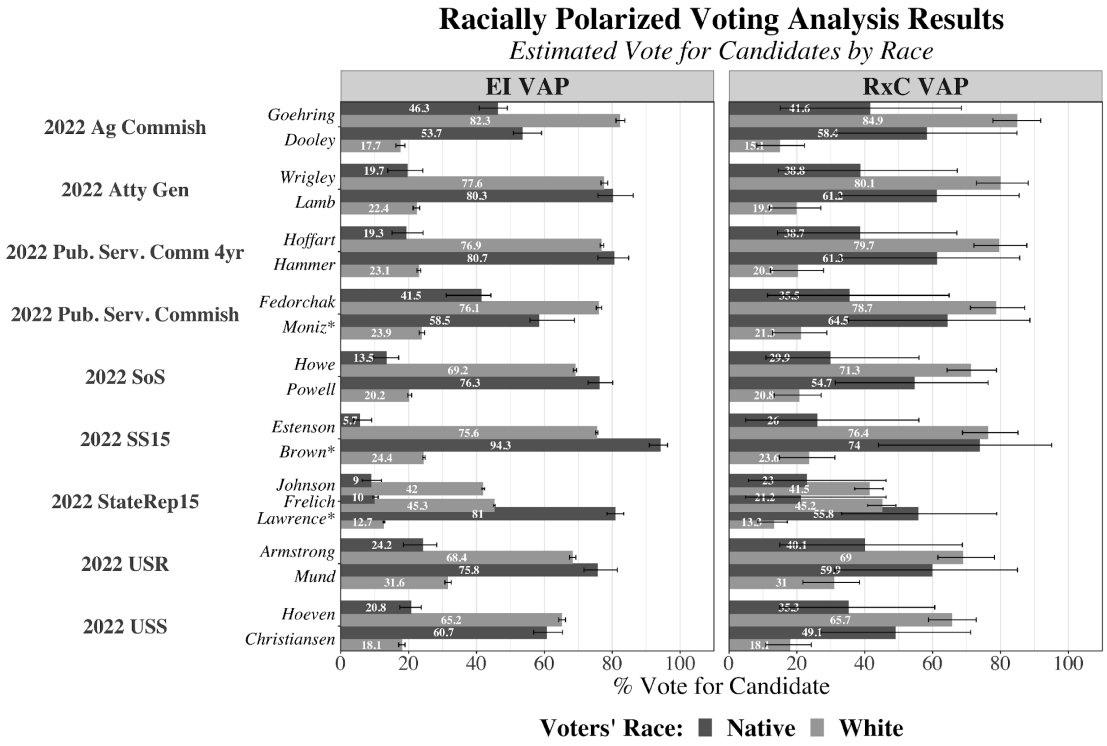


Figure 17. Racially Polarized Voting assessment in statewide contests subset to the new District 15 boundaries, 2022.



Performance Analysis District 15

I conduct a similar analysis here as I did on District 9. Figures 18-21 present electoral performance analysis on the 30 contests between 2016-2022 that exhibited RPV in D15. Overall, the results are very clear: the white-preferred candidate wins every single contest by a large margin with the exception of the 2018 U.S. Senate race where Heidi Heitkamp carried the district. Thus, the block rate by which white voters prevent the Native American preferred candidate from prevailing in District 15 is 97%.

Figure 18. Performance analysis assessment in statewide contests subset to the new District 15 boundaries, 2022 elections.

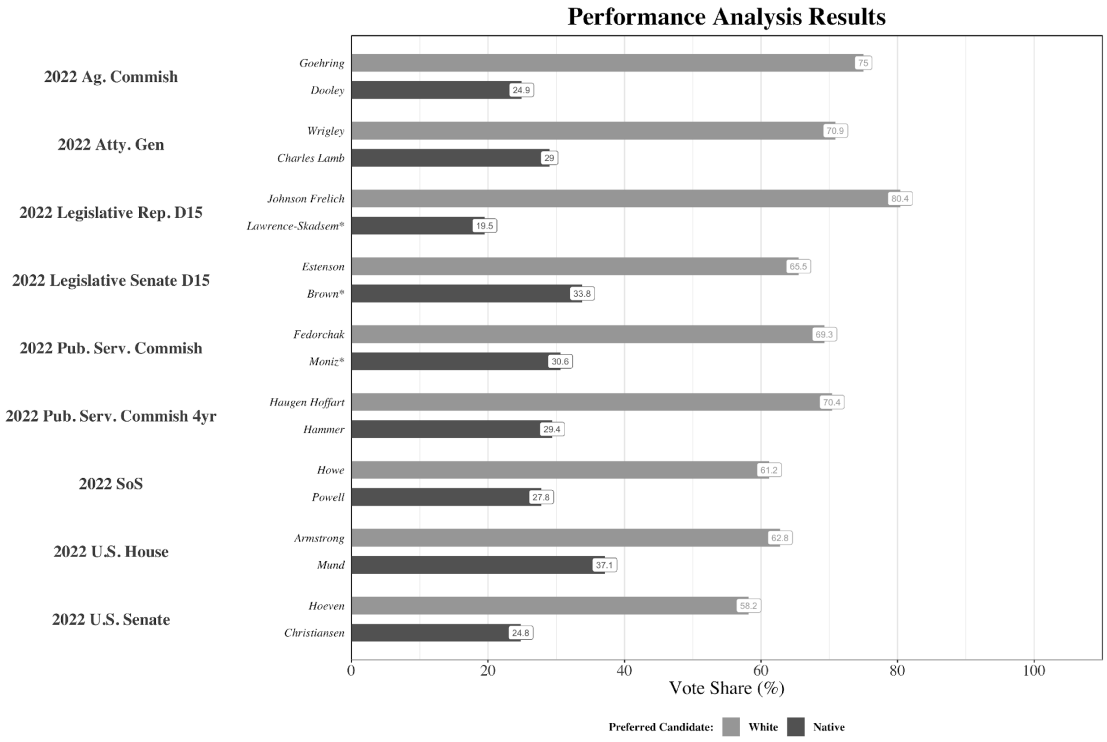


Figure 19. Performance analysis assessment in statewide contests subset to the new District 15 boundaries, 2020 elections.

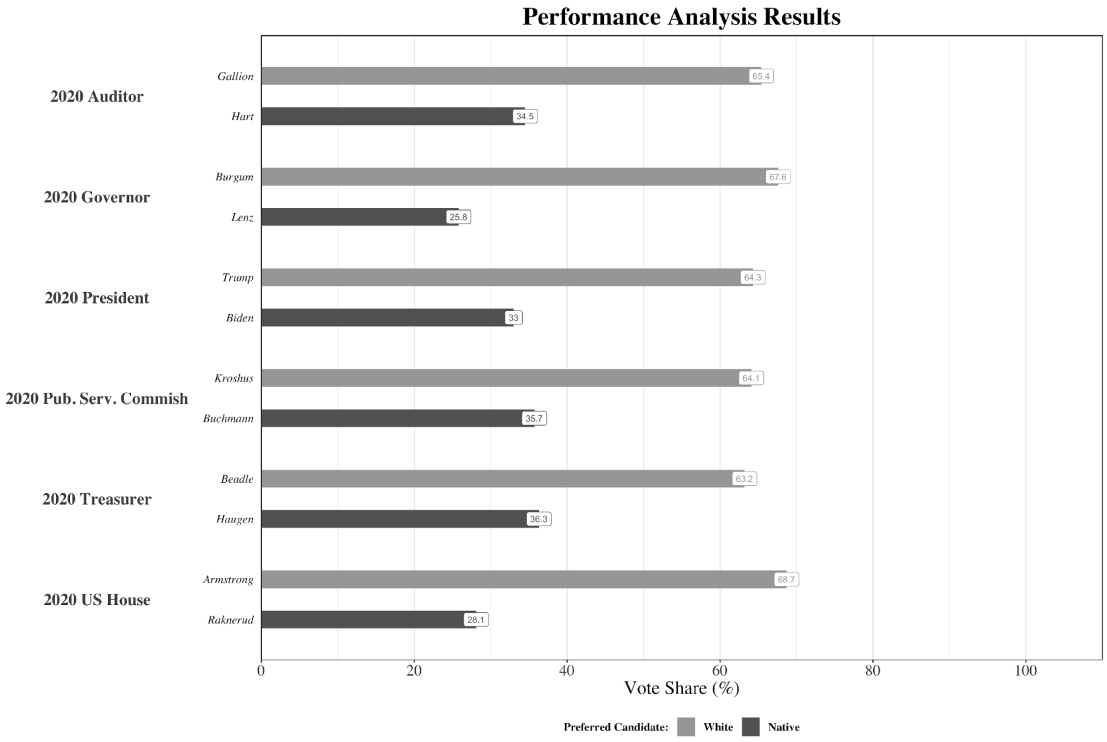


Figure 20. Performance analysis assessment in statewide contests subset to the new District 15 boundaries, 2018 elections.

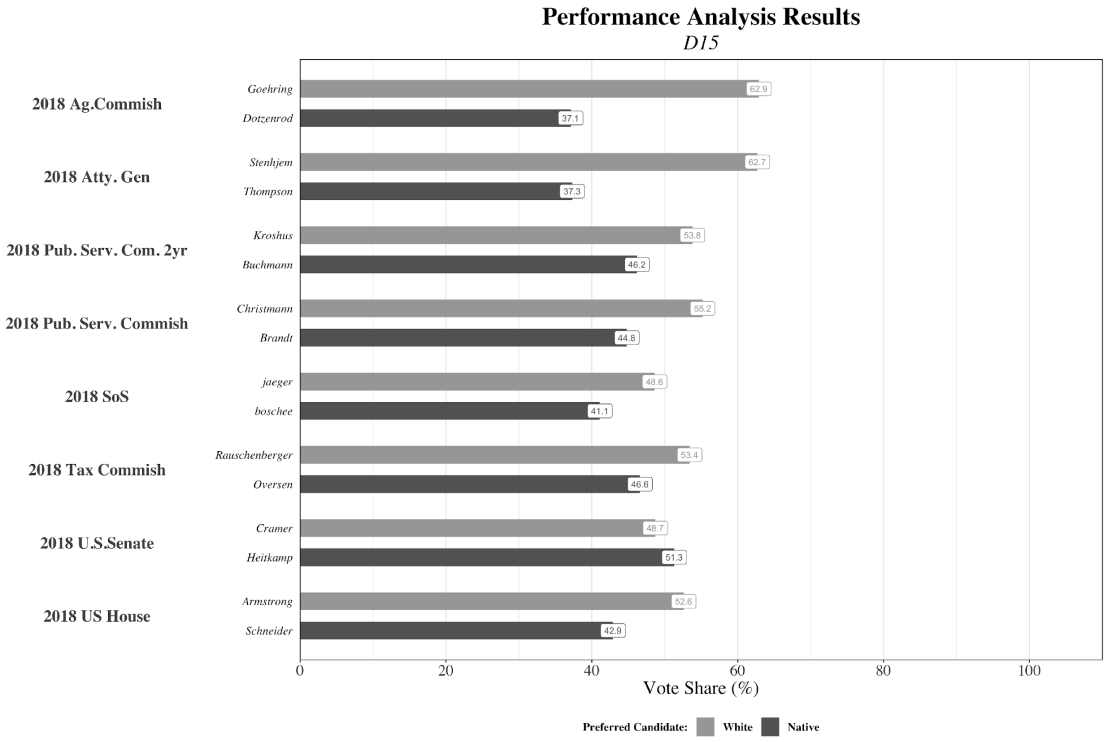
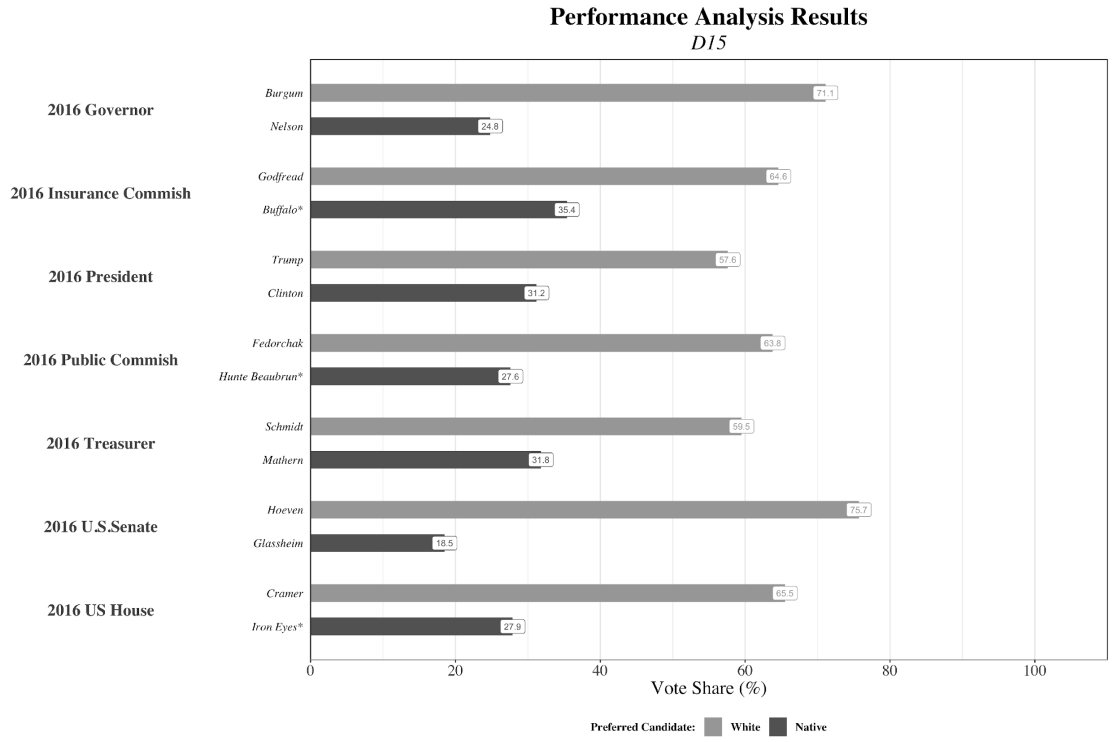


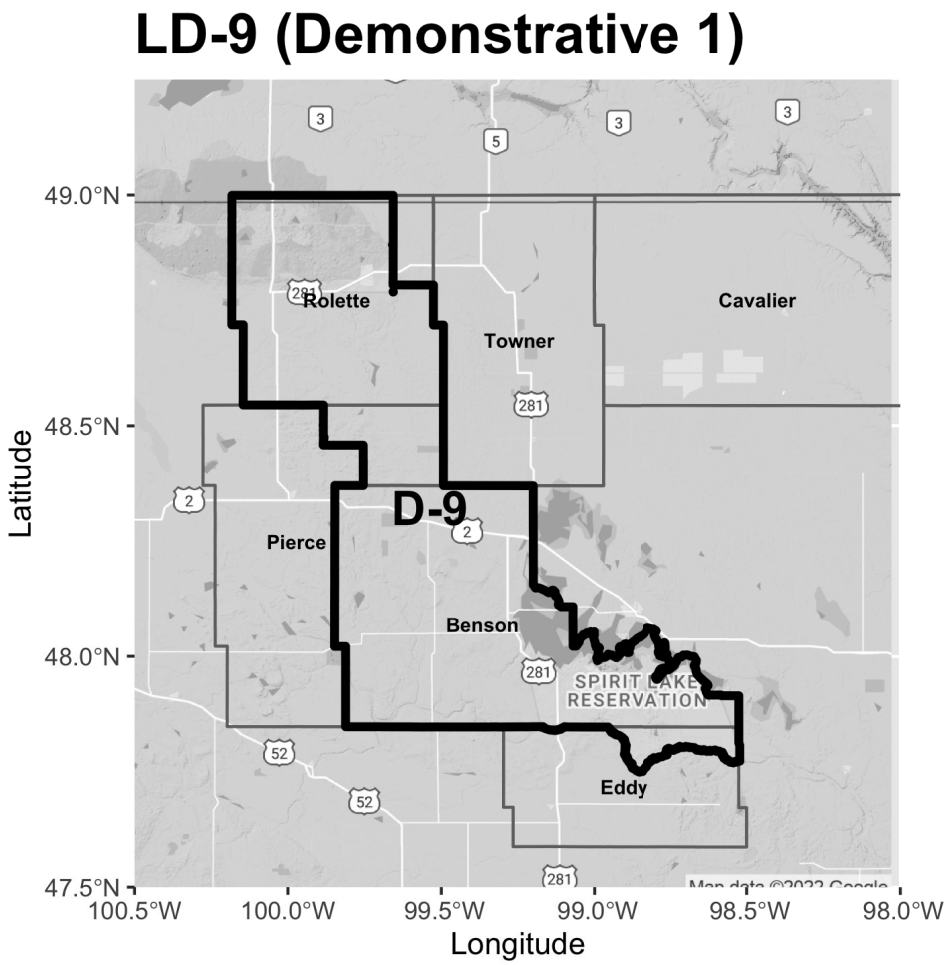
Figure 21. Performance analysis assessment in statewide contests subset to the new District 15 boundaries, 2016 elections.



Plaintiffs' Demonstrative Maps

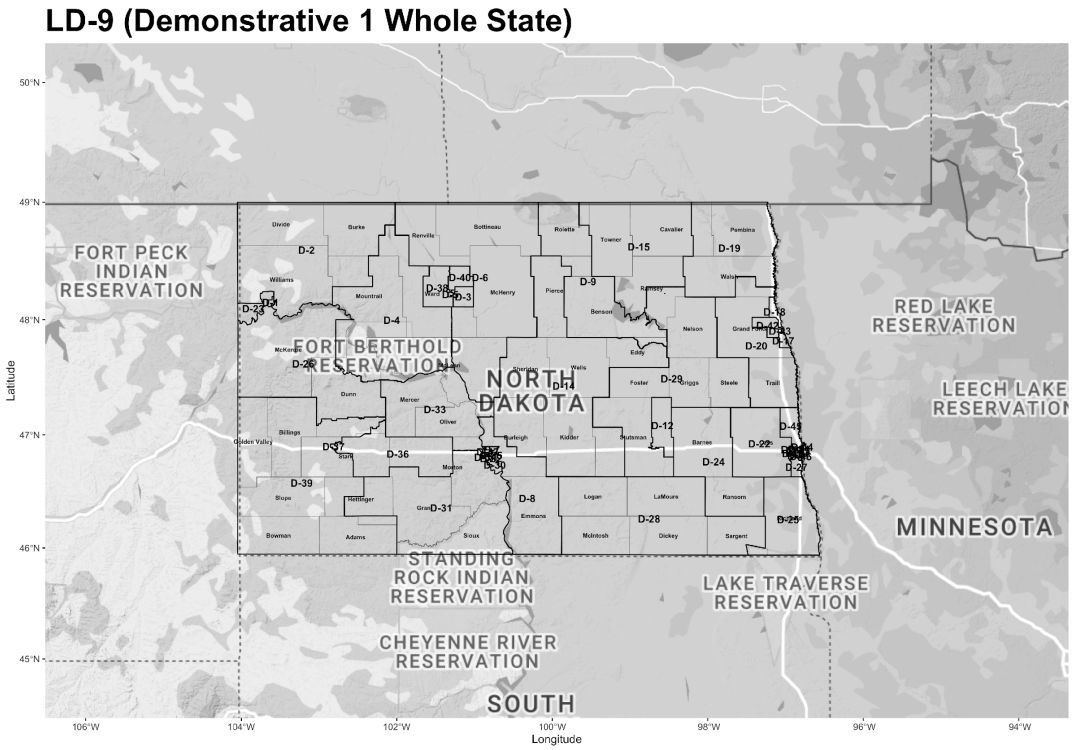
Plaintiffs have asked me to examine the electoral performance of two demonstrative districts, both of which create a new District 9 that would include the Turtle Mountain and Spirit Lake reservations. Demonstrative 1 is shown below. Figure 22 presents the map – the black line indicates the district boundary.

Figure 22. Demonstrative Plan 1.



District 9 within Demonstrative Plan 1 maintains all the 2022 precincts (which were redrawn following redistricting) whole. Its version of District 9 has a Native American VAP of 66.1% compared to enacted District 9's 54.5% and the prior decade's District 9's 74.4%. The map below shows Demonstrative Plan 1 fit into the enacted statewide plan.

Figure 22. Demonstrative Plan 1 whole state.



As the map above shows, the reconfiguration of District 9 in Demonstrative Plan 1 requires minor adjustments to neighboring Districts 14, 15, and 29. Both the enacted plan and Demonstrative Plan 1 have an overall population deviation of 9.87%. District 9 in Demonstrative Plan 1 has a Reock compactness score that is higher (i.e., more compact) than five other districts in the plan enacted by the legislature. The overall Reock compactness score of the enacted plan and Demonstrative Plan 1 are equal at 0.41. Both the enacted plan and Demonstrative Plan 1 feature similar numbers of county splits. The enacted plan splits 20 counties 49 times; Demonstrative Plan 1 splits 21 counties 51 times.

Figures 23-27 show the reconstituted performance analysis results for elections 2014-22, in a similar way I showed for enacted Districts 9 and 15. Overall, this plan performs much more favorably for Native Americans – giving them a strong ability to elect a candidate of choice at the full district. The Native American candidate of choice wins all but three contests over the five-year period.

Figure 23. Performance analysis assessment in statewide contests subset to Demonstrative 1 boundaries, 2022 elections.

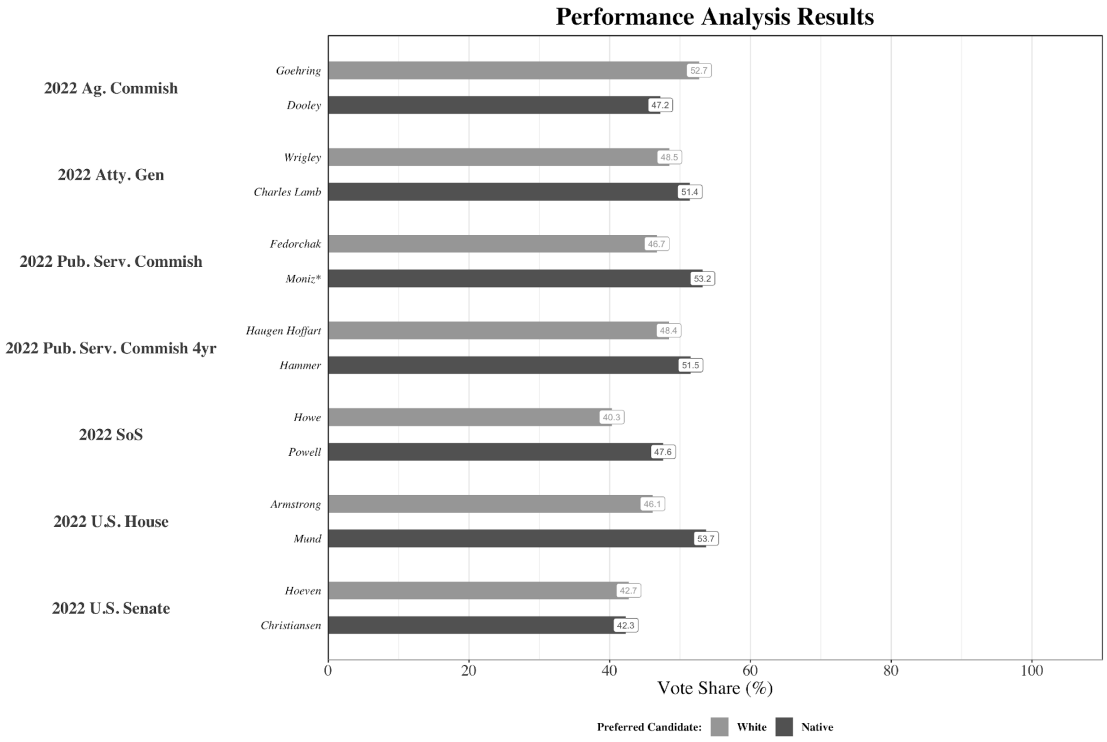


Figure 24. Performance analysis assessment in statewide contests subset to Demonstrative 1 boundaries, 2020 elections.

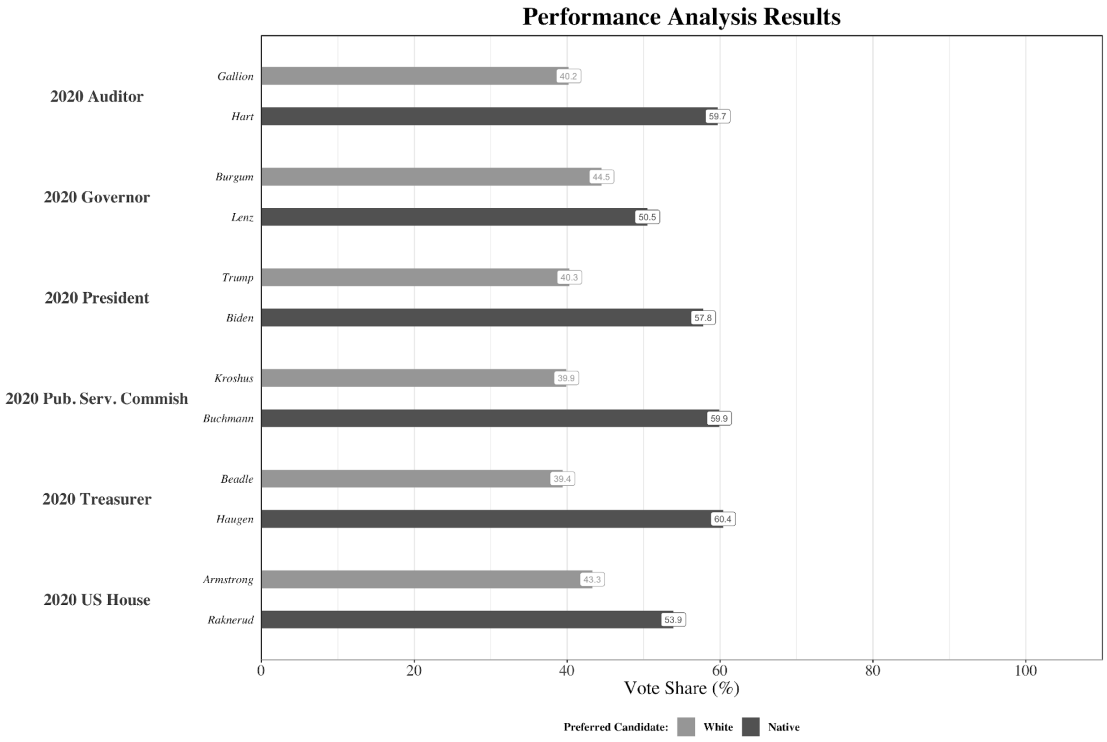


Figure 25. Performance analysis assessment in statewide contests subset to Demonstrative 1 boundaries, 2018 elections.

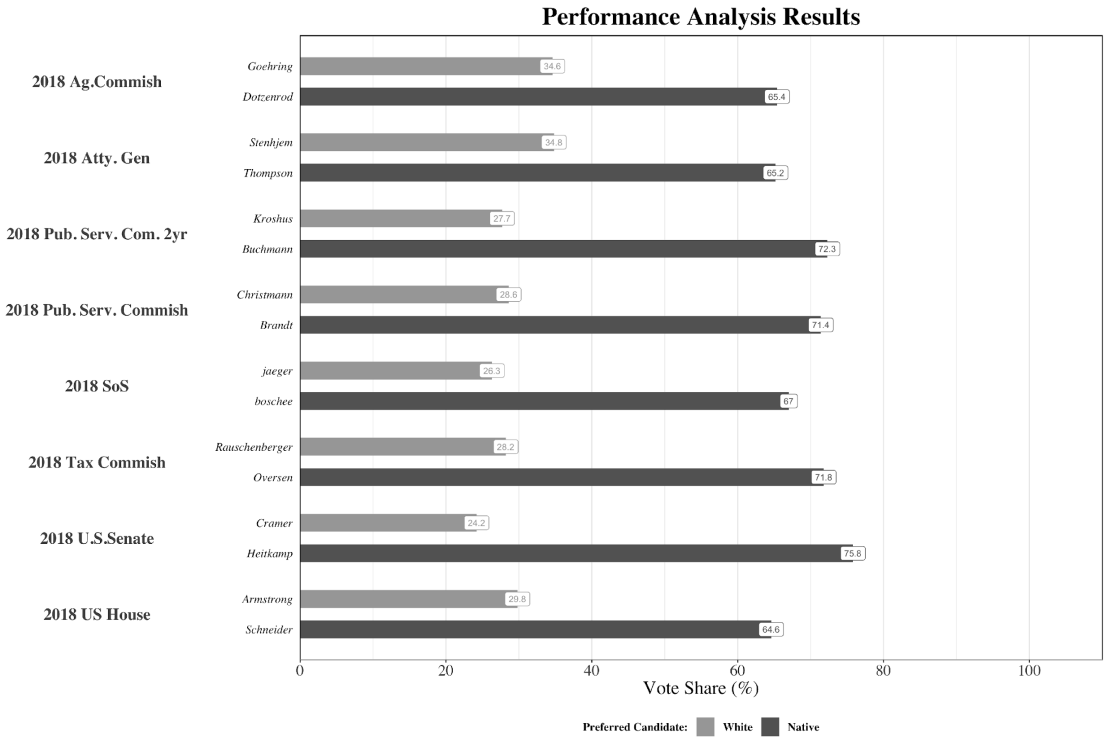


Figure 26. Performance analysis assessment in statewide contests subset to Demonstrative 1 boundaries, 2016 elections.

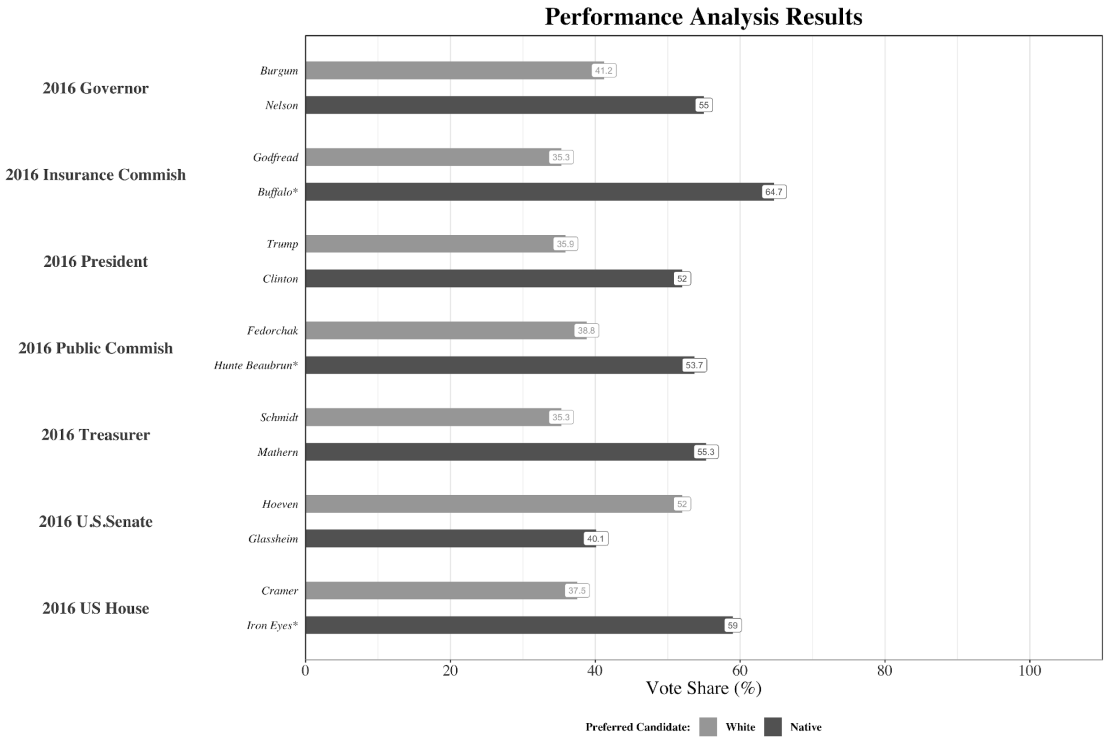
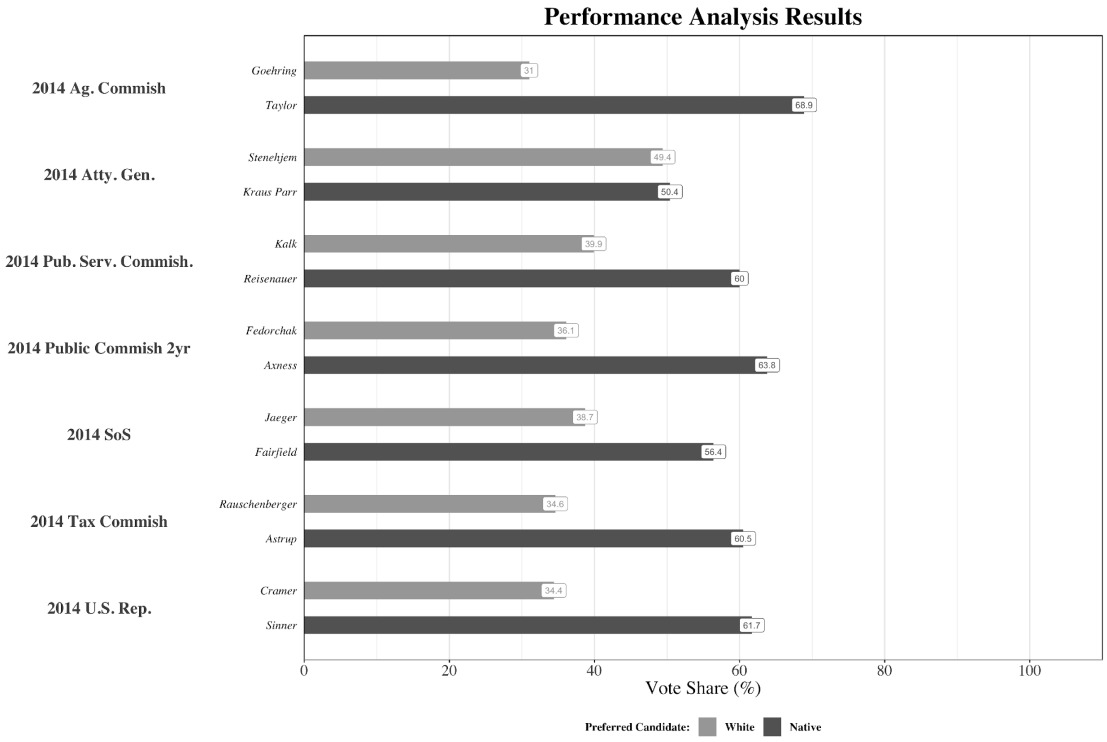
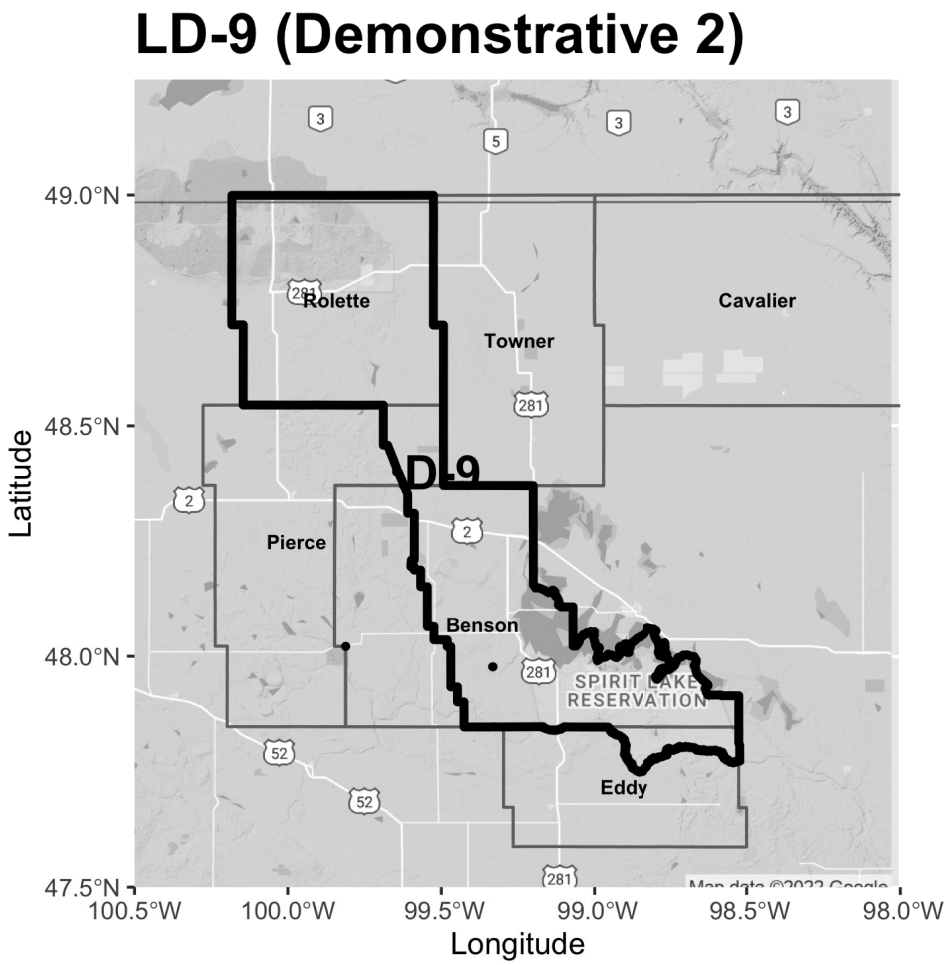


Figure 27. Performance analysis assessment in statewide contests subset to Demonstrative 1 boundaries, 2014 elections.



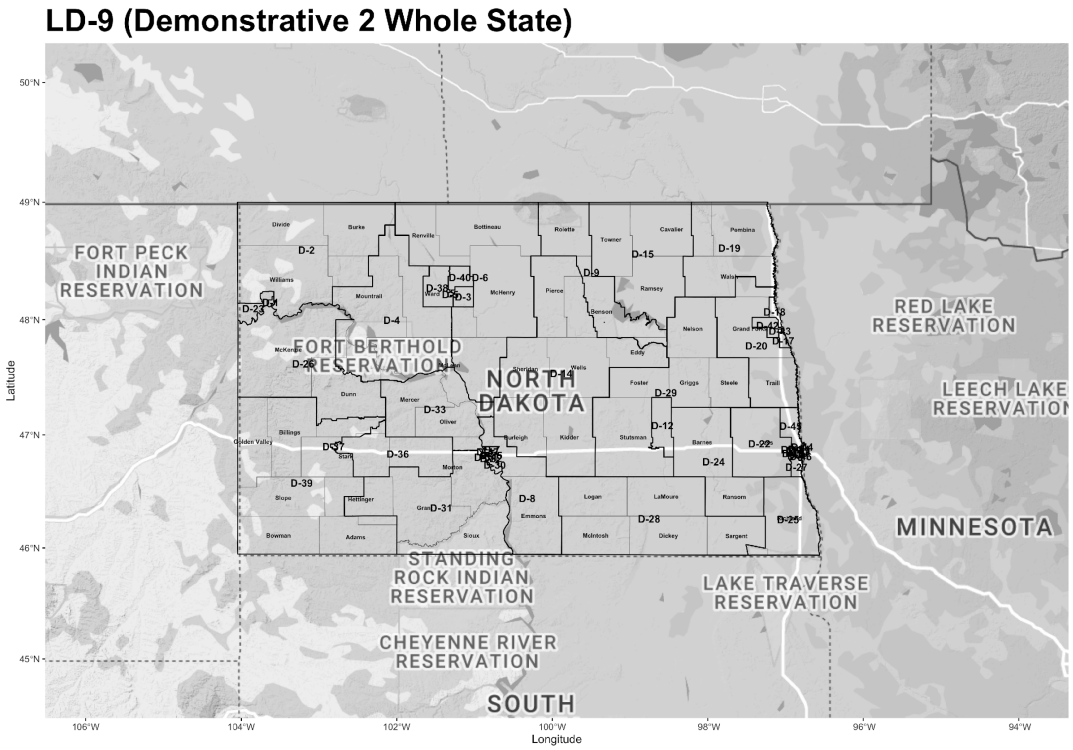
I have also analyzed a second map, Demonstrative Plan 2, which is shown below.

Figure 28. Demonstrative Plan 2.



In Demonstrative Plan 2, District 9 has a Native American VAP of 69.1%. Demonstrative Plan 2 illustrates an alternative way in which District 9 could be modified to afford Native American voters the ability to elect their preferred candidates with the most minimal effect on neighboring districts. By splitting Benson County Precinct 1 and Pierce County Precinct 1 rather than assigning them entirely to District 9 (as Demonstrative Plan 1 does), it is possible to shift population from District 14 to District 9 without necessitating a subsequent addition of new territory to District 14. This is so because in the enacted plan District 14 has a population deviation of +613, and so has room to shed population without needing a concomitant gain somewhere else. As a result, unlike in Demonstrative Plan 1, Demonstrative Plan 2 requires no changes to District 29 – limiting to just two neighboring districts (District 14 and 15) the necessary modifications. The statewide map of Demonstrative Plan 2 is shown below.

Figure 29. Demonstrative Plan 2 whole state.



In both the enacted plan and Demonstrative Plan 2, the overall population deviation is 9.87%. District 9 in Demonstrative Plan 2 has a Reock compactness score that is higher (i.e., more compact) than two other districts enacted by the legislature. The overall Reock compactness score of the enacted plan and Demonstrative Plan 2 are equal at 0.41. Both the enacted plan and Demonstrative Plan 2 feature the same number of county splits; both split 20 counties 49 times.

Figures 30 - 33 show the reconstituted election performance analysis under Demonstrative plan 2. It is clear from this analysis – and particularly from the 2022 results – that Native American voters are very likely to elect candidates of choice in this reconfigured district relative to the enacted D9. Of particular note, in 2022, the Native-preferred candidates wins seven of eight contests compared to losing all contests in enacted District 9.

Figure 30. Performance analysis assessment in statewide contests subset to Demonstrative 2 boundaries, 2022 elections.

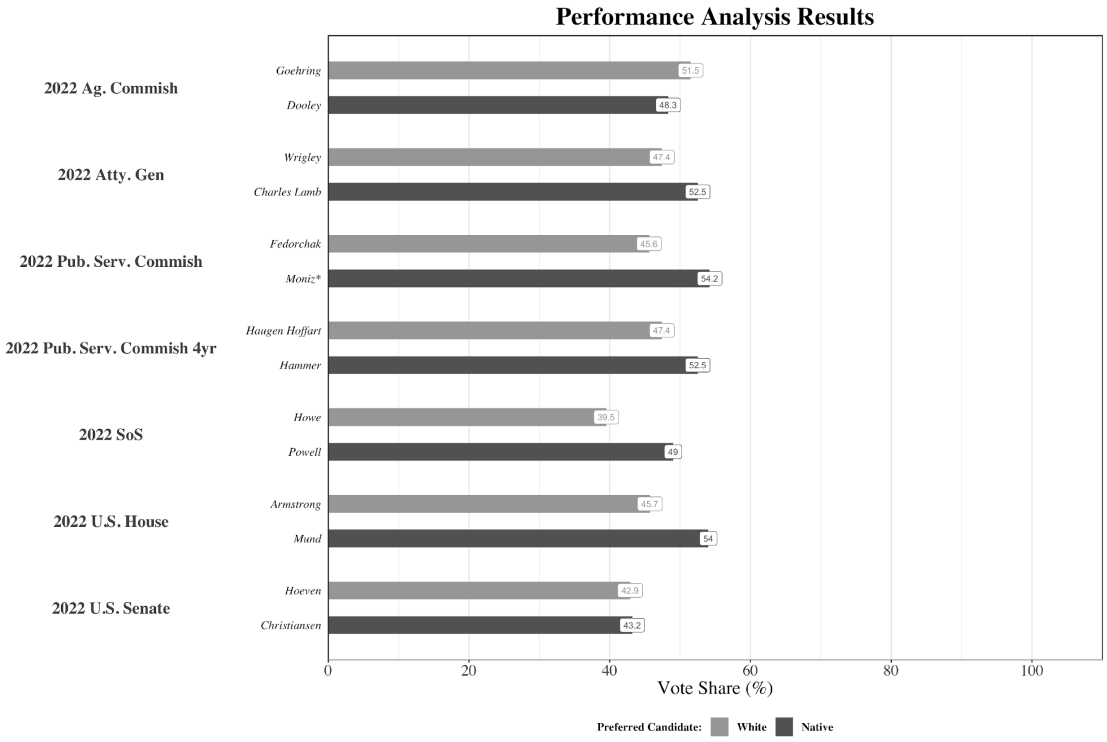


Figure 31. Performance analysis assessment in statewide contests subset to Demonstrative 2 boundaries, 2020 elections.

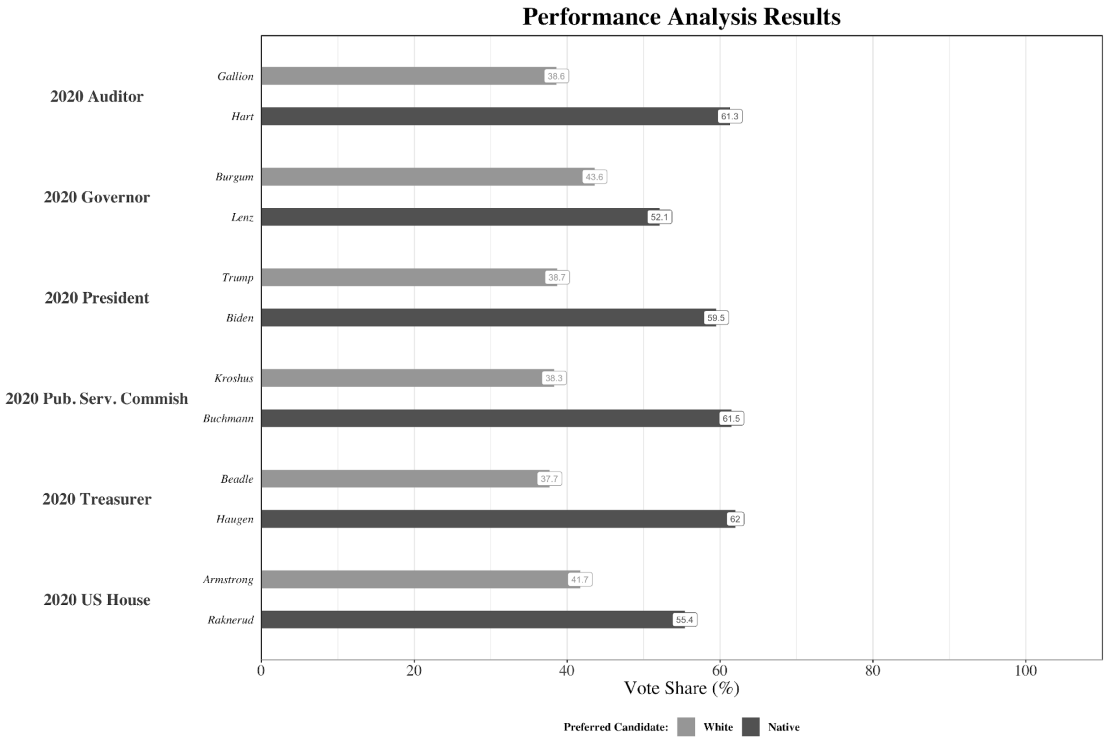


Figure 32. Performance analysis assessment in statewide contests subset to Demonstrative 2 boundaries, 2018 elections.

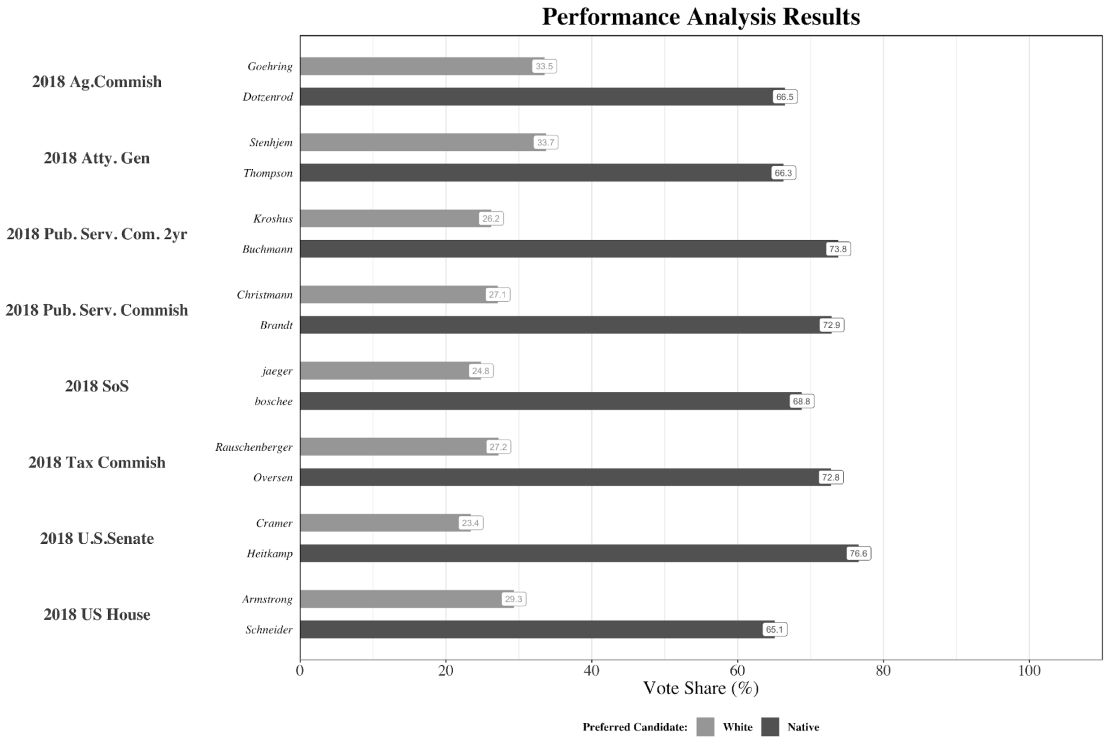
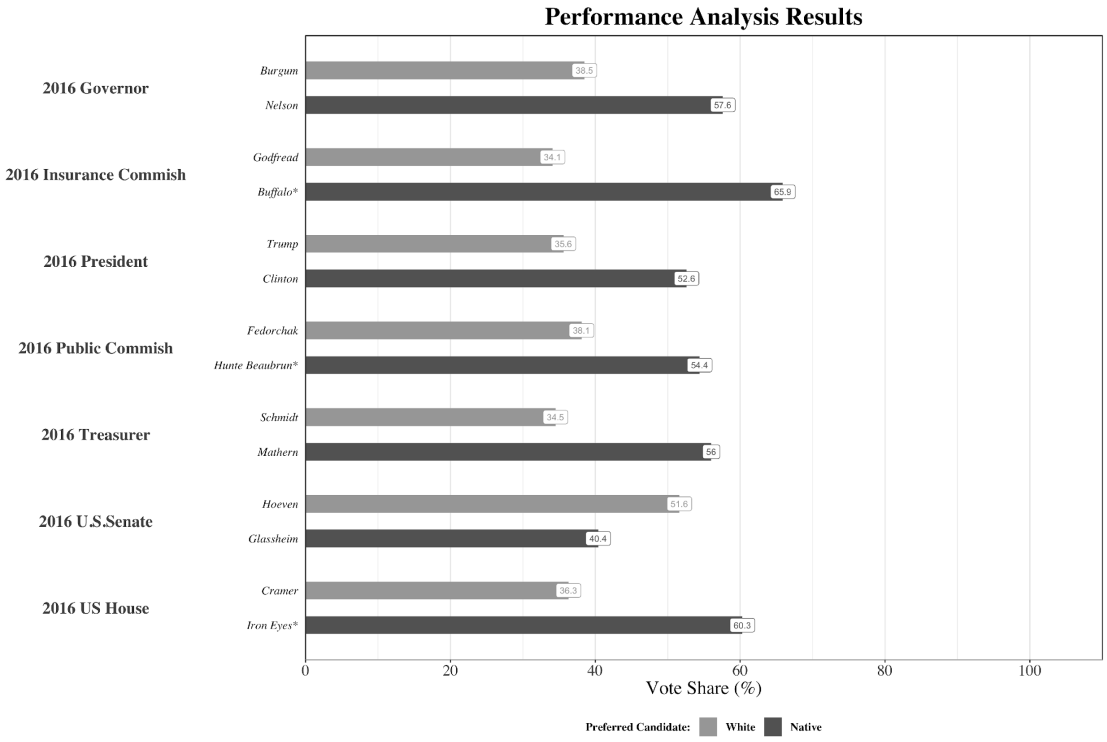


Figure 33. Performance analysis assessment in statewide contests subset to Demonstrative 2 boundaries, 2016 elections.



Overall, the alternative map shows that Native American-preferred candidates, as well as the Native American candidates, win relatively comfortably in both Demonstrative Plans 1 and 2.

Conclusion

In conclusion, without any doubt, racially polarized voting between Native Americans and non-Hispanic white voters is present in North Dakota broadly and specifically in the new District 9, subdistricts 9A and 9B, and District 15. RPV is especially clear in elections featuring Native American candidates – but is present across every single elections – save two – I analyzed across five election years (2014, 2016, 2018, 2020, and 2022). An analysis statewide reveals that whites are voting as a bloc to block Native Americans from electing candidates of choice. Narrowing in on the new District 9, white voters are voting as a bloc to prevent Native Americans from electing candidates of choice in recent elections, in endogenous elections (including the 2022 defeat of the longtime incumbent Native American state senator), and in the 60% of contests across all tested years in which the Native American preferred candidate was a Native American. In subdistrict 9A, Native-preferred candidates win 100% of the time. However, in subdistrict 9B, Native-preferred candidates rarely win meaning that they generally lose contests in that subdistrict. In District 15, Native American preferred candidates lost 97% (29/30) of the time across all tested contests, including in particular the endogenous 2022 contests featuring Native American candidates.

Finally, Plaintiffs' Demonstrative Plans 1 and 2 illustrate a reconfigured District 9 with a Native American VAP ranging between roughly 66-69%. While still a reduction from the 74.4% Native American VAP in the prior decade's map, this reflects a much less drastic reduction than in the 2021 enacted plan (54.5%). Demonstrative Plans 1 and 2 maintain the same overall population deviation as the enacted plan, respect communities of interest in reconfingured District 9, have similarly compact versions of District 9 compared to other districts enacted by the legislature, and similarly respect other traditional districting criteria compared to the enacted plan. Unlike the enacted plan, which reduced from 3 to 1 the number of Native American preferred legislators elected in northeastern North Dakota, Demonstrative Plans 1 and 2 would retain the ability of Native American voters in District 9 to elect three candidates of choice to the state senate and state house.

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